SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Draft Final Staff Report
Proposed Amended Rule 1110.2 – Emissions from Gaseous- and Liquid-Fueled Engines

December 4, 2015

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TABLE OF CONTENTS

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

The South Coast Air Quality Management District (SCAQMD) is the air pollution control agency for all of Orange County and the urban portions of Los Angeles, Riverside and San Bernardino counties. SCAQMD is responsible for controlling emissions primarily from non-vehicular sources of air pollution.

Rule 1110.2 regulates oxides of nitrogen (NOx), carbon monoxide (CO), and volatile organic compound (VOC) emissions from liquid and gas fueled internal combustion engines operating in the SCAQMD producing more than 50 rated brake horsepower (bhp). The rule was adopted in 1990 and last amended in 2012 to establish an effective date of January 1, 2016 for owners and operators of biogas engines to meet the emission limits that all other engines under this rule were required to meet in July 1, 2011. A Final Technology Assessment was also completed which outlined several technologies for biogas engine emission control along with costs.

Pursuant to the board resolution for the September 7, 2012 amendments to Rule 1110.2, SCAQMD staff has held several meetings with biogas engine stakeholders for updates on the status of both ongoing demonstration projects and the installation of controls. Most of the operators have committed to installing control equipment for biogas engines. However, some biogas engine control installations will take longer than expected and would reach full compliance after the current deadline of January 1, 2016.

In addition, EPA Region 9 brought to SCAQMD staff's attention the breakdown provisions in the July 9, 2010 amended version of Rule 1110.2, which was submitted for SIP approval in 2014. EPA has notified SCAQMD that the breakdown provisions are inconsistent with national policy regarding excess emissions during breakdown conditions, and would prevent full approval of the rule.

The proposed amendments would:

- Establish an effective date of January 1, 2017 for all biogas engines.
- Provide additional time until January 1, 2018 for all biogas engines with the submittal of a compliance plan and payment of a compliance flexibility fee.
- Provide an alternate compliance option to give biogas owners or operators that commenced demonstration projects prior to January 1, 2015 additional time until January 1, 2018 without payment of a compliance flexibility fee, and to January 1, 2019 with payment of a compliance flexibility fee.
- Allow the assessment of the compliance flexibility fee on a quarterly basis.
- Address EPA's concerns with equipment breakdowns and potential excess emissions without enforcement by establishing a limit for exceedances due to breakdowns without enforcement action per calendar quarter.

- Alternative rule language is also being proposed which would remove rule language stating that breakdowns are not violations, thus subjecting operators to potential federal enforcement action or citizen lawsuits.

The project would result in a delay of 0.9 tons per day of NOx reductions, 0.5 tons per day of VOC reductions, and 20 tons per day of CO reductions. The cost effectiveness for the installation of controls would remain unchanged from that presented in the 2012 Final Technology Assessment and Final Staff Report.

CHAPTER 1: BACKGROUND

INTRODUCTION

REGULATORY HISTORY

EXTENSION OF THE COMPLIANCE DATE FOR BIOGAS ENGINES

EPA RULING ON EXCESS EMISSIONS DUE TO BREAKDOWNS

AFFECTED INDUSTRIES

PUBLIC PROCESS

INTRODUCTION

The California Health and Safety Code requires the AQMD to adopt an Air Quality Management Plan (AQMP) to meet state and federal ambient air quality standards and adopt rules and regulations that carry out the objectives of the AQMP. The California Health and Safety Code also requires the AQMD to implement all feasible measures to reduce air pollution. The 2007 AQMP found that additional reductions are needed to meet the more stringent federal ozone and particulate matter standards. Reductions in NOx and VOC will aid in attaining the ozone standard in 2023. Figure 1 shows the projected baseline emissions for NOx and VOC and the required emissions to achieve the ozone standard in 2023. Further NOx and VOC reductions from Rule 1110.2 biogas engines are essential for achieving compliance with federal and state ambient air quality standards for PM2.5 and ozone.

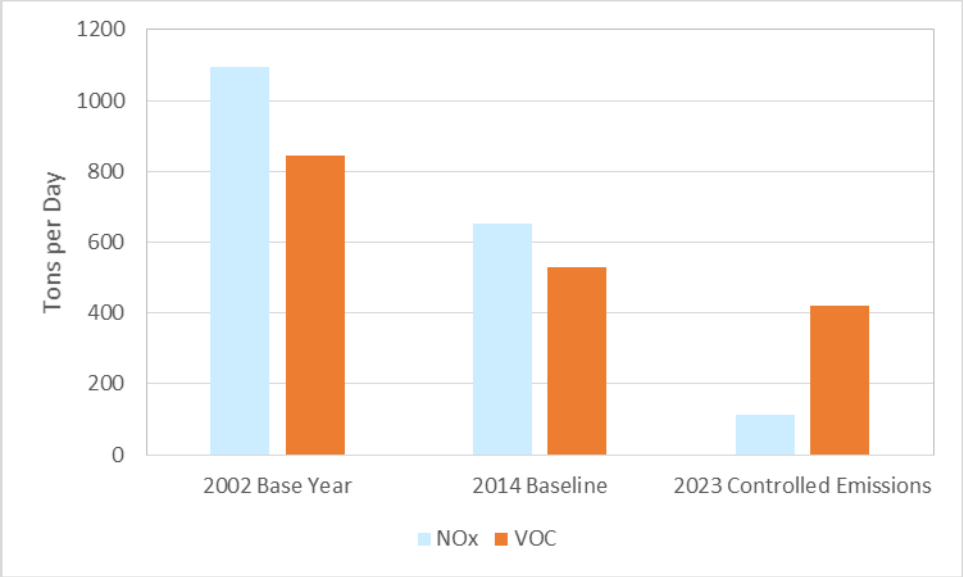

Figure 1. NOx and VOC Baseline Emissions and Emissions Needed to Achieve the 2023 Ozone Standard

Engines that are fueled by biogas (landfill or digester gas) make up about 7% of stationary, non-emergency engines in the AQMD. Landfills produce gas that results from the breakdown of municipal solid waste. This gas is primarily composed of methane and carbon dioxide. The gas is collected in a series of wells that transports it via pipeline to the landfill gas fired engines. The collected landfill gas fires one or more biogas engines with or without supplementation of natural gas.

Wastewater treatment plants produce digester gas from the plant's digesters. A digester uses heat and bacteria in an oxygen-free (anaerobic) environment to break down sewage sludge. A by-product of this process is biogas that contains methane. This biogas also fires one or more biogas engines with or without supplementation of natural gas. An advantage with using ICEs at wastewater treatment plants is that these are combined heat and power (CHP) units. The waste heat created by the engine can be recovered and used to heat the plant's digesters, resulting in energy savings.

Whether coming from a landfill or an anaerobic digester, the biogas is used to fire an internal combustion engine with a generator to produce electricity. Some facilities are self-generating facilities that use the electricity to power their processes internally. Others sell this generated power to the local utility grid. The wastewater treatment plants are primarily operated by public entities and utilities, while the landfills are operated by either public or private operators.

There are currently 58 biogas engines operating in the Basin. Of these engines, 30 are digester gas-fueled and 28 are landfill gas-fueled. These engines are operated by a total of eight public operators and five private operators at 22 locations in the South Coast Basin (6 operate digester gas-fueled engines and 7 operate landfill gas-fueled engines).

Of all the combustion sources, these engines inherently have the highest emissions. Rule 1110.2, "Emissions from Gaseous- and Liquid-Fueled Engines," was first adopted in 1990 to address emissions from stationary engines in this category. Since the rule's adoption, advances in low NOx burner and post combustion control technology have been demonstrated and implemented on several categories of combustion equipment. In contrast, the current NOx concentration BACT and rule limits for biogas engines are at least twelve times higher than allowed by AQMD boiler rules.

Projected NOx emissions reductions from biogas engines achieving the emissions limits set in the 2008 rule amendment were not included in the State Implementation Plan (SIP) because they were contingent on the completion of a Technology Assessment. The Final Technology Assessment was completed as part of the amendments to Rule 1110.2 in 2012. Upon implementation, the NOx reductions from biogas engines will be incorporated into the SIP to further advance the District's efforts towards the attainment of federal and state $PM_{2.5}$ and ozone air quality standards.

REGULATORY HISTORY

Rule 1110.2 – Emissions from Gaseous- and Liquid-Fired Engines was adopted by the AQMD Governing Board on August 3, 1990. It required that either 1) NOx emissions be reduced over 90% to one of two compliance limits specified by the rule, or; 2) the engines be permanently removed from service or replaced with electric motors. It was amended in September 1990 to clarify rule language and then amended in August and December of 1994 to modify the CO monitoring requirements and to clarify rule language. The amendment of November 1997 eliminated the requirement for continuous

monitoring of CO, reduced the source testing requirement from once every year to once every three years, and exempted non-road engines, including portable engines, from most requirements. The amendment in June 2005 made the previously exempt agricultural engines subject to the rule.

To address widespread non-compliance with stationary IC engines, the 2008 amendment augmented the source testing, continuous monitoring, inspection and maintenance (I&M), and reporting requirements of the rule to improve compliance. It also required stationary, non-emergency engines to meet emission standards equivalent to current BACT for NOx and VOC and almost to BACT for CO. This partially implemented the 2007 AQMP control measure for Facility Modernization (MCS-001). Additionally, the 2008 amendment required new electric generating engines to limit emissions to levels nearly equivalent to large central power plants, meeting standards that are at or near the CARB 2007 Distributed Generation Emissions Standards. It also clarified the status for portable engines and set emissions standards for biogas engines to become effective on July 1, 2012 if the July 2010 Technology Assessment would confirm the achievability of those limits.

The 2008 adopting resolution included commitments directing staff to conduct a Technology Assessment to address the availability, feasibility, cost-effectiveness, compliance schedule, and global warming gas impacts of biogas engine control technologies and report back to the Governing Board no later than July 2010. Additionally, the Governing Board directed that the July 2012 biogas emission limits would not be incorporated into the SIP unless the July 2010 Technology Assessment found that the proposed limits are achievable and cost-effective.

The amendment in July 2010 added an exemption to the rule affecting a remote public safety communications site at Santa Rosa Peak in Riverside County which has limited accessibility in the wintertime.

At the July 2010 Governing Board meeting, staff presented an Interim Technology Assessment to address the board resolution commitments in 2008. The Interim Technology Assessment summarized the biogas engine control technologies to date and the status of on-going demonstration projects. Due to the delays caused by the permit moratorium in 2009, the release of a subsequent report was recommended upon the completion of these projects. The Interim Technology Assessment concluded that feasible, cost-effective technology should be available that can support the implementation of the July 2012 emission limits, but that the delay in the demonstration projects would likely necessitate an adjustment to the July 1, 2012 compliance date of Rule 1110.2.

The September 2012 amendments established a compliance date of January 1, 2016 for biogas engines. A compliance option was also provided so that operators requiring additional time would be given up to two years beyond the compliance date with the submittal of a compliance plan and payment of a compliance flexibility fee. In addition, SCAQMD staff presented an Assessment of Available Technology for Control of NOx,

CO, and VOC Emissions from Biogas-Fueled Engines that detailed the different available technologies and demonstration projects for biogas engines, along with costs.

EXTENSION OF THE COMPLIANCE DATE FOR BIOGAS ENGINES

Since the amendments to Rule 1110.2 on September 7, 2012, SCAQMD staff has met with the stakeholders periodically, both in public forums and through individual meetings for updates on technology implementation. Based on feedback from these operators, some installations will take longer to install than expected and will reach full compliance after the current deadline of January 1, 2016. The range of implementation dates ranged from about mid-2016 to mid-2018.

On March 31, 2011, the Orange County Sanitation District (OCSD) completed a one year pilot study demonstration of biogas cleanup with oxidation catalyst and SCR. Since that time, the system has continued to meet the future limits of the rule and the operator is currently in the process of retrofitting the remaining engines at its two facilities with the same technology. However, since there are a total of seven engines requiring retrofits, the overall project completion date will be after January 1, 2016. Other operators have similar timelines and have expressed their concerns to SCAQMD staff about meeting the January 1, 2016 deadline.

Two biogas technology demonstration projects are continuing. One is the NOxTech system at Eastern Municipal Water District's Temecula plant. NOxTech utilizes selective non-catalytic reduction (SNCR) without the necessity for fuel gas pretreatment. Although some preliminary data has shown that the system is capable of reducing NOx from digester gas fueled engines down to 11 ppm, consistent performance is still being fine-tuned by the facility. Based on the results of additional testing of this unit, the technology may also be installed at another facility that operates one digester gas engine.

The second technology demonstration project is the hydrogen assisted lean operation (HALO) with partial oxidation gas turbine (POGT) at the City of San Bernardino Municipal Water Department. This technology employs hydrogen enrichment of the digester gas that results in leaner operation of the engine, reducing NOx emissions. The project has been partially funded with money from the SCAQMD along with the state. The project was awarded to the Gas Technology Institute (GTI) for fabrication and installation. The fabrication and installation has experienced some setbacks which have resulted in delays of the delivery of essential components belonging to the new system. The City of San Bernardino is hoping to use the results of this demonstration project, which will be utilized for only one engine, to possibly retrofit the remaining engines at the facility, five in total. Given the setbacks and delays, the operators feel that they will have a difficult time implementing the technology by 2018.

Based on the feedback from the regulated facility operators, SCAQMD staff is proposing to extend the compliance deadline for biogas engines beyond January 1, 2016.

EPA'S RULING ON EXCESS EMISSIONS DUE TO BREAKDOWNS

According to EPA Region IX staff, the current Rule 1110.2 language suggests that sources might be protected from enforcement for even gross emission violations during preventable breakdowns. Under this assessment, the current rule language is not consistent with national policy as described in EPA's recent supplemental notice of proposed rulemaking on excess emissions from startup, shutdown, and malfunction (SSM) on 79 FR 55920 (9/17/2014). This final action was finalized on June 12, 2015 (80 FR 33840). The inconsistent Rule 1110.2 language originated in the February 2, 2008 adopted amendment and EPA Region IX's comments refer to this language in the July 9, 2010 amendment. The inconsistency of the rule language with EPA national policy and its final action precludes its ability to fully approve the rule ~~and regulation~~. In the final action, EPA states that its policy applies to:

> "Entities potentially affected by this action include states, U.S. territories, local authorities and eligible tribes that are currently administering, or may in the future administer, EPA-approved implementation plans ("air agencies")."

Amendments are proposed to Rule 1110.2 to resolve EPA's issue with potential gross emission violations during ~~preventable~~ breakdowns. Failure to resolve this issue will result in EPA's disapproval of the 2010 or the current proposed amendment into the State Implementation Plan (SIP). If this disapproval is finalized, sanctions would be imposed unless the U.S. EPA approves subsequent SIP revisions that correct the rule deficiencies within 18 months of disapproval.

A final disapproval would also trigger the two-year clock for the Federal Implementation Plan (FIP) requirement. It should be noted that the submitted rule has been adopted by the SCAQMD, and U.S. EPA's final disapproval would not prevent the SCAQMD from enforcing it.

KEY ISSUES

From ongoing meetings with the affected stakeholders in the Biogas Technology Advisory Committee, staff has summarized key issues that have resulted from those discussions.

1. *The Need for Additional Time to Comply*. Most of the stakeholders notified SCAQMD staff that they would need more time beyond January 1, 2016. Particularly, operators of biogas engine demonstration projects have encountered delays and operational issues that would also necessitate additional time to resolve. One operator stated that they will need even more time to comply than is being proposed.

2. *Complying with EPA's Breakdown Provisions.* SCAQMD staff has received feedback from the regulated community that points to concerns with complying with both SCAQMD rules and EPA's SSM policy. Industry representatives have requested alternative rule language which would remove rule language stating that breakdowns are not violations, thus subjecting operators to potential federal enforcement action or citizen lawsuits.

AFFECTED INDUSTRIES

Rule 1110.2 applies to stationary and portable reciprocating internal combustion engines (ICEs) over 50 brake horsepower (bhp). PAR 1110.2 also affects the subset of engines that are fueled with biogas, which are those that are operated by landfills and wastewater treatment plants. Biogas engines are typically lean-burn engines that operate similarly to lean-burn natural gas-fired engines with a higher level of exhaust oxygen.

Despite past efforts to reduce emissions, biogas-fueled engines remain the dirtiest in terms an emission rate of mass per unit of power produced in the Basin, even though they are fired with renewable fuel. Even at BACT, these engines pollute significantly more than large central generating stations on a pound per megawatt-hour basis (Figure 2). Central generating stations are subject to the CARB 2007 Distributed Generation standards. For current biogas ICEs, the NOx emissions are over 25 times higher than those of central power plants, 119 times higher for VOC, and 75 times higher for CO.

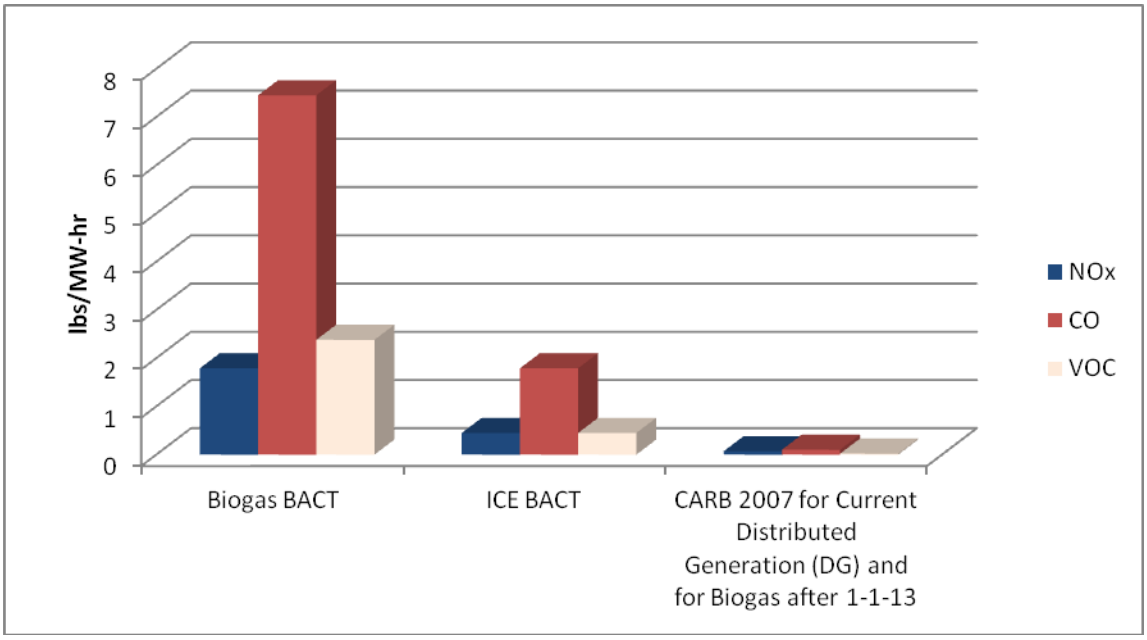

Figure 2. Current BACT for Biogas ICEs and Natural Gas ICEs vs. Central Generating Station BACT

During the 2010 Interim Technology Assessment, approximately 66 engines fueled by biogas were identified. Since that time, however, the number has decreased to 58 due to some engines being placed out of service. Nonetheless, the remaining biogas engines in operation are among the top NOx emitters amongst stationary, non-emergency engines.

For the proposed amendments pertaining to EPA's concerns over equipment breakdowns and excess emissions, these requirements would apply to all operators of gaseous- and liquid-fueled engines governed by this rule.

PUBLIC PROCESS

Since the 2008 amendment, staff has held numerous meetings of the Biogas Technology Advisory Committee with representatives from affected facilities, manufacturers, consultants and other interested parties. The Biogas Technology Advisory Committee was part of the ongoing commitment to finalize the Technology Assessment for biogas engines. Since the amendments in 2012, the Biogas Technology Advisory Committee has met on:

October 29, 2013,
May 28, 2014,
October 29, 2014,
January 14, 2015,
and February 19, 2015.

The Air and Waste Management Association (A&WMA) hosted a biogas workshop at the SCAQMD on May 16, 2013, where information on implementation technologies was presented. Additionally, the Stationary Source Committee was presented with updates on the implementation of the rule and demonstration projects as directed by the adopting resolution for the 2012 amendment, which required updates to the Stationary Source Committee at least yearly after the 2012 amendments. The Committee heard updates on Rule 1110.2 on:

June 21, 2013,
June 20, 2014,
and January 21, 2015.

SCAQMD's Technology Advancement Office also held two meetings on July 9, 2014 and January 14, 2015 to provide training on a biogas toolkit cost estimator for biogas cleanup projects. This was based on a nationwide survey of biogas control vendors and installations that was performed by a contractor that was awarded the project by SCAQMD.

A task force meeting was held on April 23, 2015 to introduce the proposed amendments and a working group meeting was held on July 9, 2015 where SCAQMD staff presented preliminary rule language for the proposed amendments. The public workshop was held on July 29, 2015 and three more working group meetings were held on August 18, 2015, September 15, 2015, and October 27, 2015.

Staff has also held several meetings with control equipment vendors and also manufacturers of emerging technologies that may provide an alternative to electrical power generation by traditional internal combustion methods. In addition, staff has met individually with nearly every biogas facility operator to discuss site-specific issues, technologies, long-term plans for existing biogas engines, and costs. Several site visits have been conducted by SCAQMD staff at affected facilities.

CHAPTER 2: SUMMARY OF PROPOSED RULE 1110.2

PROPOSED AMENDED RULE REQUIREMENTS

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The key proposed amendments can be summarized as follows:

- Extend the effective date for compliance to January 1, 2017 for all biogas engines.
- Extend the effective date for compliance to January 1, 2018 for demonstration project biogas engine operators.
- Provide an alternate compliance option to provide operators additional time for engine retrofits beyond the proposed compliance date with the submittal of a compliance plan and payment of a compliance flexibility fee.
    - Up to January 1, 2019 for demonstration projects
    - Up to January 1, 2018 for all other biogas engines
- The compliance flexibility fee would be allowed to be paid in quarterly increments, up to one year beyond the applicable compliance date.
- To address EPA's concerns on breakdowns and potential excess emissions without enforcement, staff is proposing that within any calendar quarter a facility operator would be allowed up to three incidences of breakdown per quarter~~engine~~ of NOx emissions that exceed 45 ppmv for lean burn engines and 150 ppmv for rich burn engines. For CO emissions, no more than three incidences of breakdown per quarter would be allowed that are above 250 ppmv for lean burn engines and 2000 for rich burn engines.
- An alternative rule proposal has been included that would remove rule language stating that breakdowns are not violations, thus subjecting operators to potential federal enforcement action or citizen lawsuits.
- For biogas engines operating until the time of compliance with the limits specified in Table III-B, the emission thresholds for breakdowns that will count towards the incidence limit are 185 ppmv for NOx and 2000 ppmv for CO.
- Diagnostic emission checks would be subject to the current rule provisions for correcting and demonstrating compliance within 24 hours from the time the operator knew of the excess emissions. There is no per calendar quarter limit proposed if emissions are below excess emission thresholds for breakdowns.
- Clarifications to Inspection and Monitoring requirements have been made which improve readability and enforcement.

To provide the additional time needed for technology implementation, District staff is proposing to allow biogas engine operators more time for compliance with the emission limits adopted in the 2012 amendment. Subparagraph 1110.2(d)(1)(C) establishes the emission standards for biogas engines, specifies the effective dates for the emission limits, and provides the compliance schedule for all biogas engines, as listed in Table 3

on the next page. The table is split into two parts: The first part reflects the currently effective limits and the second part establishes the one year delay of the effective date limits for compliance.

Table 3. Proposed Concentration Limits for Biogas Engines

CONCENTRATION LIMITS FOR LANDFILL AND DIGESTER GAS (BIOGAS)-FIRED ENGINES		
NO_x (ppmvd)[1]	VOC (ppmvd)[2]	CO (ppmvd)[1]
bhp ≥ 500: 36 x ECF[3] bhp < 500: 45 x ECF[3]	Landfill Gas: 40 Digester Gas: 250 x ECF[3]	2000
CONCENTRATION LIMITS EFFECTIVE JANUARY 1, 2017		
NOx (ppmvd)[1]	VOC (ppmvd)[2]	CO (ppmvd)[1]
11	30	250

[1] Parts per million by volume, corrected to 15% oxygen on a dry basis and averaged over 15 minutes.

[2] Parts per million by volume, measured as carbon, corrected to 15% oxygen on a dry basis and averaged over the sampling time required by the test method.

[3] ECF is the efficiency correction factor.

For operators of biogas engine demonstration projects, the compliance date will be extended to January 1, 2018. A new subparagraph (d)(1)(F) will specify the operators referenced previously who are still undergoing demonstration projects.

> "For the City of San Bernardino, Orange County Sanitation District and Eastern Municipal Water District that commenced and implemented technology demonstration projects prior to January 1, 2015, all their biogas engines shall have until January 1, 2018 to comply with the requirements of Table III-B."

The January 1, 2017 (non-demonstration project biogas engines) and January 1, 2018 (demonstration project biogas engines) compliance dates referenced above would involve no fee payment for the additional time.

An alternate compliance option is also proposed to provide biogas operators with additional time to comply beyond the compliance dates referenced in proposed Table III-B and subparagraph (d)(1)(F). The additional time would be provided with the submittal of a compliance plan and compliance flexibility fee. Subdivision (h) outlines the requirements for the plan submittal and the calculation of the compliance flexibility fee. The fee will now be available to be paid in quarterly increments, up to one additional year. Some stakeholders felt that paying for an entire year of fees was excessive, especially if an engine would come into compliance earlier in the year. The fee would now be calculated based on the updated fee rate ($11.75/bhp per quarter) multiplied by the rated brake horsepower of the unit and multiplied by the number of quarters to defer (up to four quarters, or one year). The fees collected from this alternate compliance option will applied to AQMD NOx reduction programs. The proposed amendments will provide biogas engine facilities with additional time to implement the proper controls to meet the emission limits. For non-demonstration project biogas engines, additional time would be provided beyond the January 1, 2017 compliance date in Table III-B up to January 1, 2018 with payment of the fee. For demonstration project biogas engines designated in (d)(1)(F), additional time would be provided beyond the January 1, 2018 compliance date in (d)(1)(F) up to January 1, 2019 with payment of the fee.

The Inspection and Monitoring (I&M) Plan requirements were established in the 2008 amendment to ensure non-CEMS engine compliance with the rule limits between source tests. It includes procedures for the monitoring of engine parameters and periodic testing of emissions with a portable analyzer, as well as recordkeeping requirements. The I&M Plan provisions in subparagraph (f)(1)(D) have been modified for this rule amendment. Subparagraph (f)(1)(D) has been renamed Inspection and Monitoring (I&M) Requirements. The ten clauses in this subparagraph have been reduced to four and they are as follows.

i. I&M Plan requirements which now refer to Attachment 1, including requirements for plan revisions.
ii. Diagnostic emission check requirements.
iii. Requirements for breakdowns with incidence limit (3 strikes provision).
iv. Applicability for engines with CO CEMS only.

All of the existing requirements that list procedures for inclusion into the facility I&M Plan are now in Attachment 1. These requirements also include procedures for diagnostic emission checks and for breakdowns that refer back to the rule provisions in subparagraph (f)(1)(D). References to provisions within Attachment 1 are specified. The requirements in clause (i) clarify that one application is required for each facility that does not have a NOx and CO CEMS for each engine. Furthermore, upon written approval from the Executive Officer~~,~~ the I&M Plan must be implemented. Before any change in I&M Plan operations can be implemented, or when there is a change in emission limits or control equipment, a plan revision must be submitted.

Clause (ii) outlines the diagnostic check requirements. Emission checks performed with a portable analyzer will now be described as diagnostic emission checks. These are unchanged from the existing rule language. A clarification has been made, however, that as long as any oxygen sensor set point adjustments have not been made within 72 hours of the next regularly scheduled diagnostic emission check, an operator can still maintain a monthly (or every 750 hour) testing schedule if the engine is in compliance before and after the set point adjustments. However, if the set points are adjusted within 72 hours of the next regularly scheduled diagnostic emission check, then the engine must revert back to a weekly (or every 150 hour) testing schedule. Subclause (f)(1)(D)(ii)(IV) states that no engine or control system maintenance or tuning may occur within 72 hours prior to the diagnostic emission check, unless it is an unscheduled, required repair. This clarification requires more frequent testing despite what is stated in subclause (IV) in order to prevent operators from maintaining a less frequent testing schedule if the engine is in compliance before and after the set point adjustments conducted within those 72 hours.

Clause (iii) outlines the procedures for responding to, diagnosing, and correcting breakdowns, faults, malfunctions, alarms, emission checks finding emissions in excess of rule or permit limits, and parameters out-of-range. The staff proposal maintains the 24-hour (or end of an operating cycle) time frame for an owner or operator who uses a portable analyzer as a diagnostic tool for monitoring purposes to correct an exceedance as soon as possible from when it is discovered [subclause (f)(1)(D)(iii)(I)]. If the emissions exceedance is not the result of a breakdown, the operator shall not be considered in violation of the emission limits if the problem is corrected and a subsequent diagnostic emission check demonstrates compliance. To address EPA's issues relating to unenforceable excess emissions from breakdowns, however, the provisions in subclause (II) of clause (iii) outline an incidence limit of no more than three breakdowns per calendar quarter which are above the following emission levels in Table VIII.

TABLE VIII
Excess Emission Concentration Thresholds for Breakdowns

	NO_x (ppmvd)[1]	CO (ppmvd)[1]
Lean-Burn Engines	45	250
Rich-Burn Engines	150	2000
Biogas Engines[2]	185	2000

[1] Corrected to 15% oxygen.

[2] Effective up to the time of compliance with the limits specified in Table III-B, after which the thresholds revert to the applicable lean- or rich-burn engine limits.

The proposed rule language states,

> "For excess emissions due to breakdowns that result in NOx or CO emissions greater than the concentrations specified in Table VIII, the operator shall not be considered in violation of this rule if the operator demonstrates the following: (1) compliance with subclause (f)(1)(D)(iii)(I), (2) compliance with the reporting requirements of subparagraph (f)(1)(H), and (3) the engine with excess emissions has no more than three incidences of breakdowns with emissions exceeding Table VIII limits in the calendar quarter."

If there are four or more breakdowns within a calendar quarter that do not meet the requirements stated above, it will be a violation. For breakdowns resulting in emissions in excess of the rule or permit limits, the emissions often are of a more serious nature and the staff proposal aims to place a cap on the number of these excursions. EPA's concerns on excess emissions are based on the current rule allowing for correction of a breakdown without penalty and this situation could potentially occur repeatedly, resulting in much more excess emissions. The staff proposal will characterize breakdowns as a new definition in paragraph (c)(3):

> "BREAKDOWN is a physical or mechanical failure or malfunction of an engine, air pollution control equipment, or related operating equipment that is not the result of operator error, neglect, improper operation or improper maintenance procedures, which leads to excess emissions beyond rule related emission limits or equipment permit conditions."

Further clarification of a breakdown is specified in paragraph (c)(3) in that any breakdown, no matter what the resultant excess emissions would be, that is caused by operator neglect, improper operation or improper maintenance procedures would be a violation. All breakdowns, no matter what the cause, are still subject to the current reporting requirements of Rule 1110.2 (f)(1)(H).

The requirements for parameters out of range that are now in a new subclause (f)(1)(D)(iii)(III). The subclause language would remain unchanged in the proposed rule, except for the addition of the term diagnostic emission check for clarification.

> "For other problems, such as parameters out-of-range, an operator shall correct the problem and demonstrate compliance with another diagnostic emission check within 48 hours of the operator first knowing of the problem."

Stakeholders have commented on situations where an engine shuts off and a diagnostic emission check cannot be conducted. The staff proposal maintains that if emissions during a breakdown are not verifiable by SCAQMD compliance staff, it will be counted towards the quarterly incidence limit. Stakeholders have asked for more clarity on what qualifies as a breakdown. There are instances where a parameter will go out of range

which can result in an engine fault that automatically shuts down the engine before an emissions measurement can be recorded. Another example is if an engine experiences a mechanical fault, such as a blown gasket, which causes it to shut down before an emissions measurement can be taken. For these instances, the onus is on the operator to demonstrate that the parameter drift or mechanical failure was caused by a breakdown that was out of the operator's control and for which excess emissions defined by Table VIII were unlikely. A breakdown that SCAQMD compliance staff verifies the excess emissions being a result of operator error, neglect, improper operation or improper maintenance procedures will count as a violation. Unexpected engine and control system failures occur occasionally and as long as the operator can demonstrate and SCAQMD compliance staff can verify that the cause was not operator error, neglect, improper operation or improper maintenance procedures, then it is a breakdown and operators can have up to three such instances per calendar quarter before becoming a violation. Proposed subclause (f)(1)(D)(iii)(IV) lists existing provisions for parameters out of range that require the operator to correct the problem and demonstrate compliance with another diagnostic emission check within 48 hours of discovery.

Industry representatives have expressed that they would like alternative rule language to be drafted that would also satisfy EPA policy requirements. Subparagraph (f)(1)(H) lists the reporting requirements for breakdowns, which are based on the requirements in SCAQMD Rule 430, Breakdown Provisions. Subclause (f)(1)(D)(v)(III) of the current rule states that an operator shall not be in violation of the emission limits of this rule or in permit conditions if the operator corrects the problem and tests within 24 hours from discovery and complies with the reporting requirements of subparagraph (f)(1)(H). Industry would like the current rule language stating that breakdowns are not violations to be removed. The removal of the language that states "that it is not a violation" in addition to adding suggested clarifying language would satisfy EPA's concerns. However, this would not shield these operators from potential federal enforcement and citizen lawsuits, because Rule 430 is not SIP approved.

The provisions in clause (f)(1)(D)(v) of the current rule would now be in clause (f)(1)(D)(iii). Additional language has been added that states that nothing in clause (f)(1)(D)(iii) is intended to exempt any breakdown that otherwise becomes a violation of local, State, and federal requirements. Under this proposal, a breakdown that SCAQMD staff verifies as not being in violation under Rule 430 would still not be exempt from federal enforcement. In the event that stakeholders request amending the rule at a later time to something less stringent, such as the provision in the current staff proposal, it may not be approvable by EPA because it would constitute a backsliding from what was originally amended.

~~Industry maintains that it would like to proceed with this proposal, so s~~Staff is proposing two versions of the proposed rule for Governing Board consideration:

1. Staff proposal with breakdown emission thresholds and quarterly incidence limit, and

2. Industry-suggested– proposal that would remove rule language stating that breakdowns are not violations, thus subjecting operators to potential federal enforcement action or citizen lawsuits.

Minor clarifications were also added to further specify the requirements of the I&M Plan for engines that operate with CEMS. An engine that operates both NOx and CO CEMS is not subject to the requirements of subparagraph (f)(1)(D), which contain the I&M Plan requirements. Operators with engines that have CEMS have the advantage of monitoring their emissions continuously and would be instantly alerted in the event that something goes wrong with the equipment. Any excess of the emission standard for these engines would be a violation under the current rule. There are, however, engines that have a NOx CEMS but do not have a CO CEMS. For example, lean-burn engines typically have inherently lower CO emissions than their rich-burn counterparts and are not required to have a CO CEMS as stated in clause (f)(1)(A)(vii) of the current rule. Since these engines have a NOx CEMS, an I&M Plan as it pertains to NOx is not required. However, since these engines are subject to the quarterly CO monitoring requirements of (f)(1)(D)(iii)(II) in the current rule as part of the I&M Plan, proposed clause (f)(1)(D)(iv) clarifies the applicability of these requirements for CO.

> "If an engine has a NOx CEMS and does not have a CO CEMS, it is subject to this subparagraph (f)(1)(D) as it pertains to CO only."

CHAPTER 3: IMPACT ASSESSMENT

EMISSIONS IMPACTS AND COST EFFECTIVENESS

The proposed amendments will have emissions impacts on biogas engines regulated by Rule 1110.2, but they would be delayed. Since biogas engines emit significantly more pollutants than natural gas engines and central power plants, the future emission standard will reduce NOx, VOC, and CO emissions significantly. On an aggregate pollutant basis, current biogas engine emission rates per megawatt-hour are over 55 times higher than those of central power plants. The future emission standard will result in up to 74% emission reductions from current biogas ICE emissions (Figure 3).

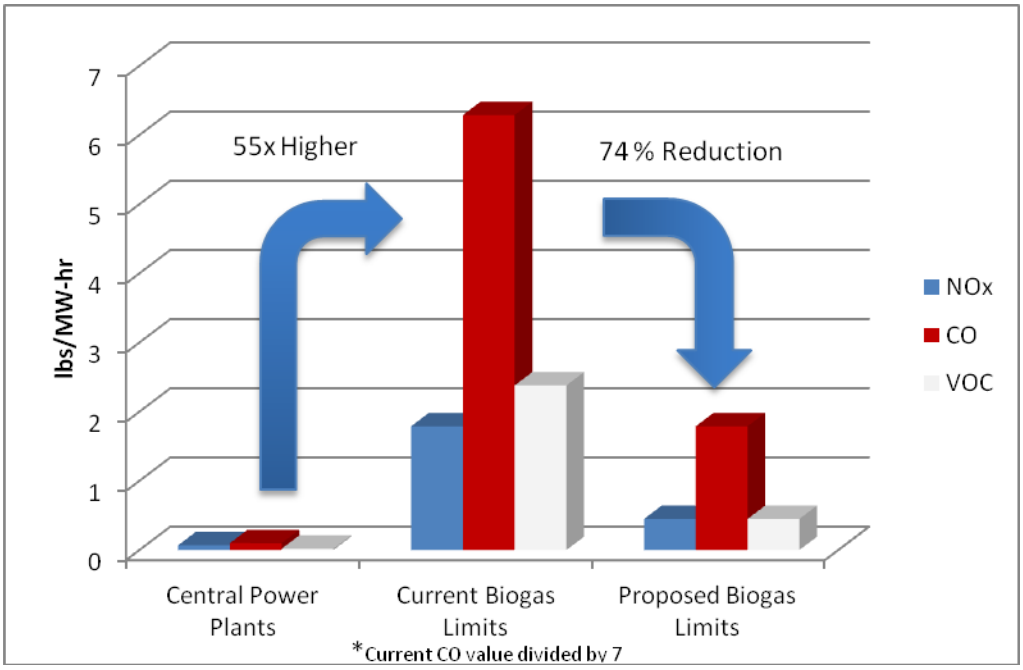

Figure 3. Emissions from Biogas ICEs versus Central Power Plants

The emission reductions calculated during the 2012 amendments were 0.9 tons per day of NOx, 0.5 tons per day of VOC, and 20.0 tons of CO. The reductions under the proposed amendment would occur in two steps. The first reductions will occur by January 1, 2017 and the second step of reductions will occur one to two years later when all biogas engines will comply with the rule limits, including those under the alternate compliance option.

During the 2012 amendment, the cost effectiveness for biogas engines was estimated to range from $1,700 to $3,500 per ton of NOx, VOC, and CO/7 reduced. Staff also calculated cost effectiveness to account for additional gas cleanup and associated contingencies, based on stakeholder feedback. Using vendor quotes for gas cleanup systems, two additional cost effectiveness curves were created reflecting the additional gas cleanup and an added 20% capital cost contingency. The upper cost effectiveness curve has a range from $2,600 to $5,900 per ton. The upper and lower (base level)

curves create a band that accounts for equipment contingencies. The cost effectiveness ranges are illustrated in Figure 4 for digester gas engines and Figure 5 for landfill gas engines.

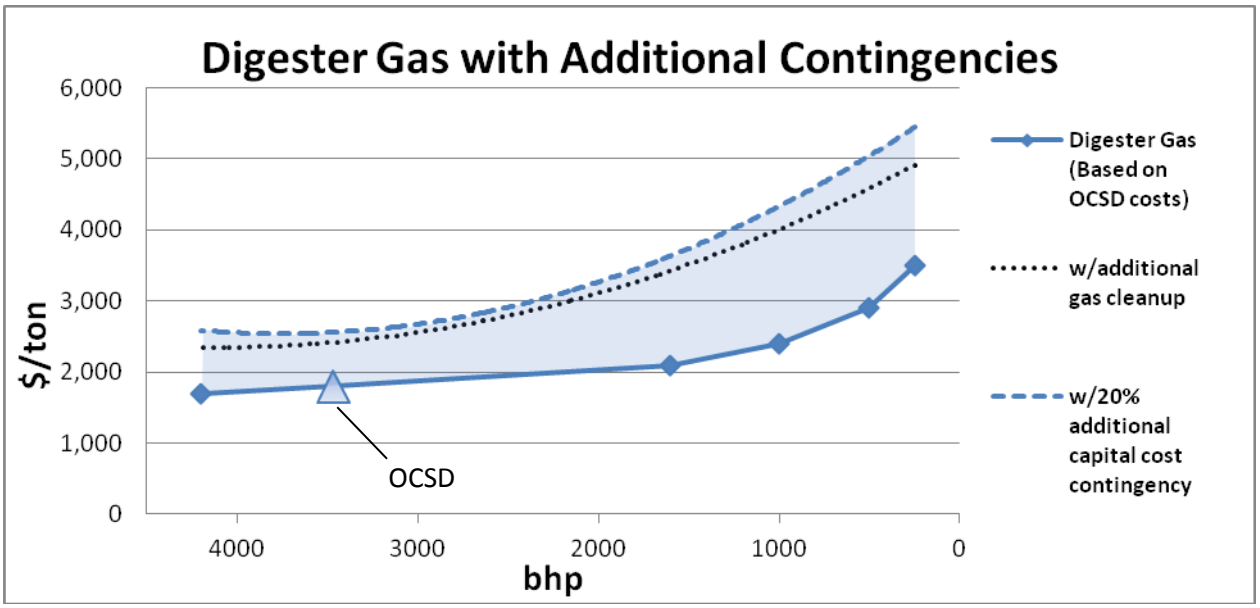

Figure 4. Cost Effectiveness for Digester Gas (Catalytic Aftertreatment)

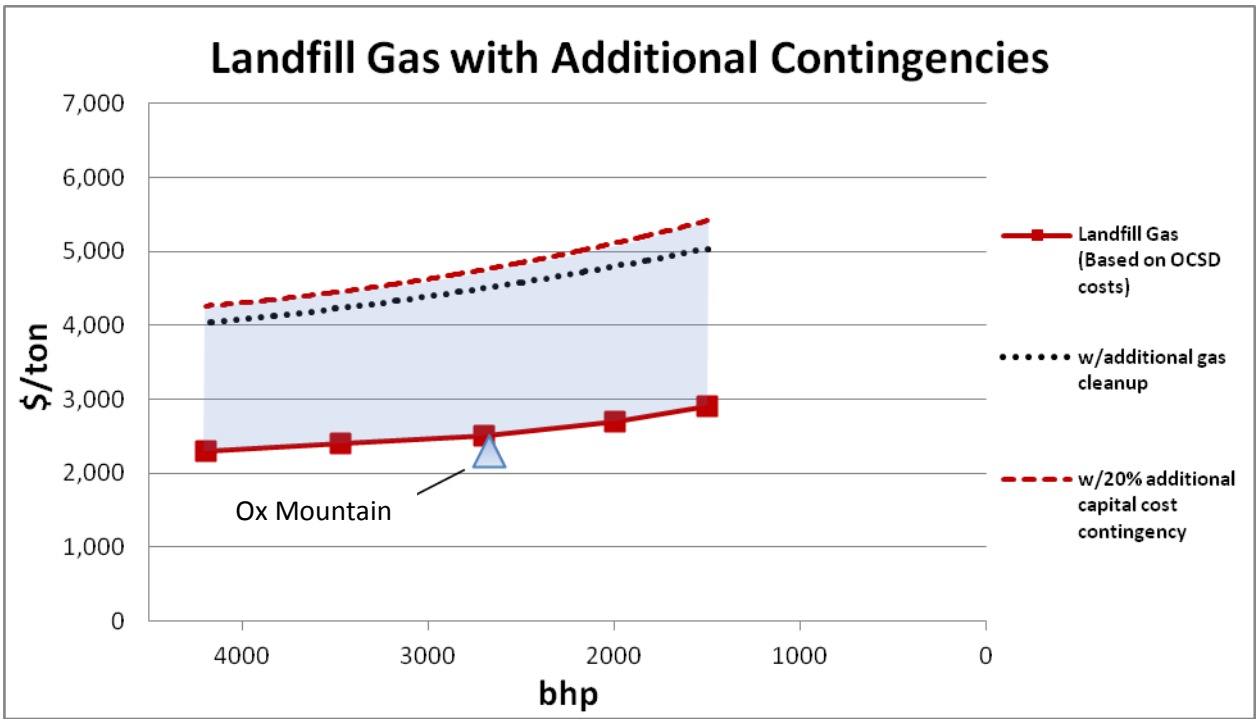

Figure 5. Cost Effectiveness for Landfill Gas (Catalytic Aftertreatment)

Digester gas and landfill gas engines of all sizes were shown to be cost-effective in 2012. The proposed amendments pertaining to EPA's policy on excess emissions from breakdowns will not require the modification or addition of control equipment and will not have an effect on costs.

INCREMENTAL COST-EFFECTIVENESS

Health and Safety Code Section 40920.6 requires an incremental cost-effectiveness analysis for Best Available Retrofit Control Technology (BARCT) rules or emission reduction strategies when there is more than one control option that would achieve the emission reduction objective of the proposed amendments, relative to ozone, CO, SOx, NOx, and their precursors. The proposed amendment does not include new BARCT requirements; therefore, this provision does not apply to the proposed amendment.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) ANALYSIS

PAR 1110.2 is considered a "project" as defined by the California Environmental Quality Act (CEQA), and the SCAQMD is the designated lead agency. Pursuant to CEQA and SCAQMD Rule 110, SCAQMD staff reviewed PAR 1110.2 and concluded that a Subsequent Environmental Assessment (SEA) was the appropriate CEQA document for the proposed project. Staff released a Notice of Preparation and Initial Study (NOP/IS) for a 30-day public review period from July 29, 2015 to August 27, 2015, and a CEQA scoping meeting was held on Thursday, August 13, 2015 at 10 AM in Conference Room GB at SCAQMD Headquarters. No comments were received on the NOP/IS or at the scoping meeting. The Draft SEA was circulated for public review and comment from September 1, 2015 to October 16, 2015. No comments were received on the Draft SEA. Since the close of the comment period, revisions have been proposed to PAR 1110.2. Staff has analyzed these proposed revisions and have determined that they do not trigger recirculation pursuant to CEQA Guidelines §15088.5. The Draft SEA can be obtained at SCAQMD Headquarters, by calling the SCAQMD Public Information Center at (909) 396-3600, or by accessing SCAQMD's CEQA website at: http://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2015/par-1110_2-draft-sea.pdf?sfvrsn=2.

SOCIOECONOMIC ASSESSMENT

PAR 1110.2 would delay implementation of new concentration limits for biogas-fired engines at affected facilities from 2016 to between 2017 and 2019. In addition, PAR 1110.2 would affect fewer biogas-fired engines. The additional time for compliance and fewer affected engines would result in potential savings for affected facilities. As such, no adverse socioeconomic impact is anticipated for PAR 1110.2.

DRAFT FINDINGS UNDER CALIFORNIA HEALTH & SAFETY CODE SECTION 40727

California Health and Safety Code Section 40727 requires that prior to adopting, amending or repealing a rule or regulation, the AQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing and in the staff report. In order to determine compliance with Sections 40727 and 40727.2 a written analysis is required comparing the proposed rule with existing regulations.

The draft findings are as follows:

Necessity: PAR 1110.2 is necessary to reduce emission limits from combustion equipment in order to meet federal and state ambient air quality standards for ozone and PM 2.5.

Authority: The AQMD obtains its authority to adopt, amend, or repeal rules and regulations from California Health and Safety Code Sections 39002, 40000, 40001, 40440, 40702, 40725 through 40728, and 41508.

Clarity: PAR 1110.2 has been written or displayed so that its meaning can be easily understood by the persons affected by the rule.

Consistency: PAR 1110.2 is in harmony with, and not in conflict with or contradictory to, existing federal or state statutes, court decisions or federal regulations.

Non-Duplication: PAR 1110.2 does not impose the same requirement as any existing state or federal regulation, and is necessary and proper to execute the powers and duties granted to, and imposed upon the AQMD.

Reference: In amending this rule, the following statutes which the AQMD hereby implements, interprets or makes specific are referenced: Health and Safety Code sections 39002, 40001, 40702, 40440(a), and 40725 through 40728.5.

COMPARATIVE ANALYSIS

Under Health and Safety Code Section 40727.2, the AQMD is required to perform a comparative written analysis when adopting, amending, or repealing a rule or regulation. The comparative analysis is relative to existing federal requirements, existing or proposed AQMD rules and air pollution control requirements and guidelines that are applicable to industrial, institutional, and commercial combustion equipment. A comparative analysis is not required if the District finds that the proposed rule does not impose a new emission

limit or standard. The District makes that finding, since the 2012 limits are already existing and the proposed rule does not make it more stringent. Nevertheless, the District incorporates by reference the comparative analysis contained in the February 2008 Final Staff Report for PAR 1110.2, which is also updated below for changes.

National Emissions Standards for Hazardous Air Pollutants and New Source Performance Standards

Appendix F in the 2008 Final Staff Report for Proposed Amended Rule 1110.2 (February 2008) provides a detailed summary and comparison of the key elements of PAR 1110.2, the RICE NESHAP, and the NSPS. Appendix F is incorporated in this report by reference and is available at http://www.aqmd.gov/hb/2008/February/080233a.html. The proposed amendments of PAR 1110.2 are not in conflict with federal regulations.

AQMD Rules Applying to Stationary Gaseous- and Liquid-Fueled Engines

AQMD Rule 218 and 218.1 - Continuous Emission Monitoring Rules, which were amended on May 14, 1999, and May 4, 2012, respectively, set forth requirements for new, modified and existing continuous emission monitoring systems that include certification, development and implementation of a Quality Assurance/Quality Control Plan, recordkeeping, reporting, and performance specifications. PAR 1110.2 requires ICEs with required CEMS to comply with Rule 218 and 218.1.

AQMD Rule 401 – Visible Emissions, which was last amended on November 9, 2001, prohibits the discharge of emissions into the atmosphere from any single source for period or periods aggregating more than three minutes in any one hour which will cause: a dark or darker shade as that of a number 1 on the Ringelmann chart, as published by the United States Bureau of Mines, or of an opacity equal or greater than number 1 on the Ringelmann chart.

AQMD Rule 431.1 – Sulfur Content of Gaseous Fuels, which was last amended on June 12, 1998, prohibits the sale and use natural gas with a sulfur content exceeding 16 ppm. Rule 431.1 also prohibits the sale and use of the following gases with a sulfur content exceeding: 150 ppmv in landfill gas; 40 ppmv in refinery gas, sewage digester gas and other gases.

AQMD Rule 431.2 – Sulfur Content of Liquid Fuels, which was last amended on September 15, 2000, prohibits the purchase by stationary source end users of any diesel fuel with a sulfur content exceeding 15 ppm on and after June 1, 2004.

AQMD Rule 1303 - New Source Review Requirements, which was last amended on December 6, 2002, requires BACT, modeling and emission offsets for any new or modified source which results in an emission increase of any nonattainment air contaminant, ozone depleting compound or ammonia.

AQMD Rule 1401 - New Source Review of Toxic Air Contaminants, which was last amended on June 5, 2015, specifies limits for maximum individual cancer risk (MICR), cancer burden, and non-cancer acute and chronic hazard index (HI) from new, modified

and existing permitted sources which emit toxic air contaminants (TACs) listed in Table I of Rule 1401. Although numerous TACs may be emitted from engines, formaldehyde, acrolein, methanol, and acetaldehyde account for essentially all of the mass emissions. PAR 1110.2 target pollutants are NOx, VOC and CO.

AQMD Rule 1470 - Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines, which was amended on May 4, 2012, addresses primarily toxic diesel PM from new and existing, stationary, emergency and non-emergency, diesel engines, whereas Rule 1110.2 addresses only NOx, VOC and CO emissions.

AQMD Regulation XX - Regional Clean Air Incentive Market (RECLAIM) superseded many Regulation IV and Regulation XI rules for NOx and SOx for the largest facilities with an emission trading program that achieved equivalent emission reductions, but in a way to allow facilities flexibility in achieving emission reduction requirements for NOx and SOx by methods such as add-on controls, equipment modifications, reformulated products, operational changes, shutdowns, and the purchase of excess emission reductions. Facilities for which emission fee data for 1990 or subsequent year shows four or more tons per year of NOx or SOx, excluding certain exempt sources, are subject to this program. Regulation XX specifically identifies requirements for ICEs, in addition to other specific sources, which include monitoring, reporting and recordkeeping for NOx and SOx emissions. PAR 1110.2 would apply to VOC and CO emissions from IC Engines from these sources.

While only applicable to new electrical generating engines, the CARB 2007 Distributed Generation Regulation is discussed below.

CARB 2007 Distributed Generation Regulation

Beginning in 2007 CARB required new Distributed Generation (DG) units sold in the state to be certified by meeting emission standards that are at least equivalent or more stringent than those for large central power generating stations with BACT. The emission standards are applicable unless engines are subject to District requirements. In addition, the regulation calls for currently permitted equipment to meet the more stringent emission standard by the earliest practicable date. Biogas fueled ICEs subject to the CARB regulation installed after January 1, 2013 must meet the emission standards of large central power generating stations with BACT.

ATTACHMENT A

PAR 1110.2 PUBLIC COMMENTS AND RESPONSES

The Public Workshop for Proposed Amended Rule 1110.2 was held on July 29, 2015. Comment letters received on and after that date are responded to below. These comments helped the rule proposal evolve, and staff appreciates all the stakeholder input.

The comment letters have been numbered and individual comments within each letter have been bracketed and numbered. Following each comment letter is staff's responses to the individual comments.

Comment Letter #1	Fortistar Methane Group LLC letter dated August 10, 2015
Comment Letter #2	Eastern Municipal Water District letter dated August 13, 2015
Comment Letter #3	Southern California Alliance of Publicly Owned Treatment Works (SCAP) letter dated August 14, 2015
Comment Letter #4	California Council for Environmental and Economic Balance (CCEEB) letter dated August 17, 2015
Comment Letter #5	Karl Lany/Montrose Environmental email dated August 18, 2015
Comment Letter #6	SoCalGas letter dated August 19, 2015
Comment Letter #7	Mesa Water District letter dated October 7, 2015
Comment Letter #8	Southern California Association of Publicly Owned Treatment Works, Eastern Municipal Water District, Small Business Alliance, Southern California Gas Company, Southern California Air Quality Alliance, Western States Petroleum Association, Orange County Sanitation District, Los Angeles County Sanitation Districts, Irvine Ranch Water District, City of Corona, Department of Water and Power, City of Riverside Public Works Department, City of San Bernardino Municipal Water Department, Inland Empire Utilities Agency, South Orange County Wastewater Authority, California Independent Petroleum Association, California Association of Sanitation Agencies, Regulatory Flexibility Group, Waste Management letter dated October 15, 2015
Comment Letter #9	CCEEB letter dated October 19, 2015
Comment Letter #10	Fortistar Methane Group LLC letter dated October 27, 2015

Comment Letter #1 – Fortistar Methane Group LLC, August 10, 2015

FORTISTAR METHANE GROUP LLC
One North Lexington Avenue • White Plains, New York 10601
Tel. (914) 421-4900 • Fax. (914) 421-0052

August 10, 2015

BY US POST

Mr. Mark Abromowitz
Board Consultant to Hon. Joseph Lyou
South Coast AQMD

Dear Mr. Abromowitz:

On behalf of Fortistar Methane Group LLC ("Fortistar") please accept this comment letter in conjunction with the rule-making process for SCAQMD Rule 1110.2 ("Rule"). As you know, Fortistar has been an active participant in the Rule 1110.2 "Working Group" and we appreciate the Board's collaborative approach relative to the proposed changes to the Rule.

At the July 2015 Working Group meeting, a draft set of proposed Rule changes were distributed which carve out additional time for compliance to two specific entities – the City of San Bernardino and the Eastern Municipal Water District. We greatly appreciated staff's decision to propose an additional compliance timeframe for these entities based on their early exploration and adoption of technology demonstration projects. We respectfully request that Fortistar and its associated sites subject to the Rule be considered for the same extension based on a similar level of investment and commitment to future compliance with the Rule. 1-1

Please know that after reviewing the course of events, it is clear that we have fallen short in sharing with staff the efforts we have taken which would justify such an extension, and are appreciative of your consideration of the information below which includes a description of our sites, our negotiations with equipment suppliers and economic considerations that we feel support our request. 1-2

1. **Overview of Fortistar Sites**

Six of Fortistar's project entities are affected by the pending implementation Rule 1110.2. They are:

1. MM Lopez Energy LLC - (Los Angeles County)
2. MM Prima Desheca Energy LLC- (Orange County)
3. Coyote Canyon Energy LLC – (Orange County)
4. NM Milliken Genco LLC – (San Bernardino County)
5. NM Mid Valley Genco LLC - (San Bernardino County)
6. NM Colton LLC – (San Bernardino County)

1-3

Of these six facilities, four (Milliken, Mid Valley, Coyote Canyon, and Colton) have either recently been shut down or will shortly be shut down for economic reasons unrelated to Rule

1

1110.2. The remaining two facilities, Lopez and Prima continue to operate and are the focus of this briefing.

2. Lopez Facility, Los Angeles County

Currently, Lopez has two functioning engines that deliver energy. Lopez was accepted into the LADWP FIT Program in June 2014. Prior to that, it was clear that the project's power purchase agreement, with a ten-year term beginning in 2006, did not generate sufficient cash flow to support the installation of equipment required by Rule 1110.2.

With Lopez's acceptance into the LADWP FIT program in June 2014, Fortistar became actively engaged, investing in plans and specifications that will result in a fully engineered selective catalytic reduction (SCR) system for one of the two engines[1]. We have attached as Exhibit A our efforts to explore and invest in this technology. We are committed to install this system in 2016. After an appropriate shakeout period, the engine will be fully operational and compliant in 2017. Given this timeframe, and our existing investment in this technology, *we would respectfully request the Lopez project be allowed a compliance extension date of January 1, 2018.*

We believe the facts are clear that Fortistar has expended substantial efforts to employing an SRS Rule 1110.2-compliant system. Fortistar initially invested in the analysis of several alternative technologies and, as described below, in 2014 selected DCL International, Inc. ("DCL) which we determined had the highest probability of reliability. DCL was to build a plant for another party that we could review and was also to provide a guarantee on operations. We have since come to learn that the construction project is delayed and the guarantee is different than from what we initially anticipated.

1-3 cont.

Specifically, Fortistar initiated discussions with equipment suppliers for compliant equipment upgrades in June 2014 including DCL and Airflow Catalyst Systems. Fortistar developed a strong interest in DCL's approach due to DCL's stated ability to provide a firm guarantee that encompassed the entire scope of equipment supply. This single vendor concept is important to Fortistar because procuring gas conditioning equipment and exhaust gas treatment from separate vendors inherently creates more operational and warranty risk should the equipment ultimately fail to provide the gas quality required for our PPA partners. Accordingly, from the beginning of our discussions with DCL we required operational data to confirm the proposed equipment's effectiveness. Unfortunately, for various reasons, DCL has not yet provided the data to Fortistar and the equipment guarantee has not materialized in an acceptable form.

Although we continue to work with DCL in pursuit of data proving the effectiveness of their proposed equipment and warranty, we are now actively working with other vendors to comply with the Rule. For gas conditioning we are in discussions with Parker and Willexa relative to equipment proposals. For the SCR system we are engaged in active discussions with Miratech as an alternative to AeriNOx (a DCL affiliated company). Our first priority, based on engineering, production and delivery constraints, is the procurement of the gas conditioning equipment. We are informed, the expected production timeline for this component is approximately 26 weeks from approved drawings with 4-6 weeks being required for submittal drawing preparation. Allowing 2 weeks to

[1] The second engine is scheduled for shut-down consistent with the implementation date of Rule 1110.2.

review/approve drawings, this amounts to approximately 34 weeks to deliver a gas conditioning system.

As you can see from Exhibit A, we have been substantially involved in the vetting of new compliance technologies and have invested resources – financial and otherwise – in exploring all options. Our proposed path forward for Lopez is:

- Continue negotiations with equipment vendors so that a recommendation can be made to Fortistar management for procurement of a gas conditioning system by **8/31/15.**
- Issue purchase order for gas conditioning system on or about **9/30/15** and subject to Fortistar's satisfaction of the reliability of the equipment.
- Electrical separation of Lopez engines complete and providing power to LADWP by **10/30/15.**
- Continue negotiations with equipment vendors and recommend procurement of an SCR system by **10/30/15.**
- Issue purchase order for SCR system by **1/15/16.**
- Delivery of gas conditioning system at Lopez expected by **6/1/16.**
- System operational for testing following installation by **10/1/16.**
- Lopez gas conditioning system and SCR system fully operational by **1/1/17. Note: Shake out period and reliable functioning by 1/1/18 .**

1-3 cont

However, the decision to analyze and deploy new technology does not exist in a vacuum. Like other entities, Fortistar continues to make these decisions against the backdrop of the economic climate in which it operates. This is evident considering our experience at Prima Desheca.

3. Prima Descheca

Although the Lopez site is our test bed for our integration of compliance technologies, economic factors make the Prima Descheca ("Prima") site more challenging. Prima entered into a power purchase agreement (PPA) with SDG&E in 2008 which expires on October 1, 2022. The power pricing is in the high $50/MW-hour range. The low power price and short term remaining on the PPA do not provide for adequate revenue or operating life to recover the installation and operational costs of the necessary equipment for Rule 1110.2 compliance. The project has an annual net profit of approximately $200,000. In addition, the project has posted an approximate $940,000 letter of credit securing its obligation to deliver electricity to SDG&E for the term of the PPA. If required to comply with Rule 1110.2, the project would be forced to shut down effective by January 2017, resulting in an approximate loss of $2,500,000 in revenues, including the loss of the letter of credit.

1-4

3

Further, with annual Compliance Flexibility Payments estimated at $390,000, these obligations alone are far in excess of annual profits which makes it uneconomic to continue operations. Given these facts, *we believe it is equitable to request that the Prima project be grandfathered under existing rules and be permitted to operate until the expiration of the current term of the SDG&E PPA, or October 1, 2022*.

1-4 cont.

4. Conclusion

We appreciate your consideration of Fortistar's genuine and substantial efforts in adopting compliance technology and the circumstances, which we feel justify an extension of the compliance timelines at two of our facilities. We understand that the rule making process is a complex one and we thank you for your receipt and evaluation of these comments.

Very truly yours,

Jonathan Maurer

Jonathan Maurer
Acting CEO
Fortistar Methane Group, LLC

4

EXHIBIT A: TIMELINE OF EFFORTS TO COMPLY WITH RULE 1011.2

The following is a timeline of actions taken relative to procurement of equipment necessary for compliance with Rule 1110.2. Many communications with DCL and other vendors have taken place in addition to these events:

- **June 2014** – Acceptance of Fortistar proposal by LADWP for power under the LADWP FIT program. Until this date, Fortistar did not have a viable financial model for installation of equipment required by rule 1110.2. **The project was approved and funded subject to conditions required for financing (i.e. executed PPA). This included the installation of equipment required by rule 1110.2.**
- **September 2014** – Project Development scoping meeting conducted at DCL office in Toronto, Canada.
- **9/16/14** – DCL visits Lopez site and draws gas samples collected for use in development of the preliminary design of the gas conditioning and SCR systems.
- **9/30/14** – Fortistar received quote for gas conditioning and purification system from DCL.
- **10/2/14** – Gas analytical report received from 9/16/14 samples.
- **10/3/14** – Fortistar received quote for catalytic guard bed from DCL.
- **10/31/14** – Fortistar received revised proposal from AeriNOx for SCR system based on ongoing discussions with the vendor.
- **10/31/15** – Fortistar completed development and was in a position to execute PPA with LADWP; we deferred execution to request some contract cleanup items.
- **2/10/15** – Fortistar received a revised quote from DCL for gas conditioning and catalytic guard systems based on ongoing discussions with the vendor. Met with DCL prior to 1110.2 meeting and were told to expect operational data imminently. Fortistar expressed willingness to execute a Purchase Order with DCL once data was reviewed.
- **2/26/15** – Gas sampling for additional VOC data.
- **3/18/15** – Met with DCL in New Orleans and were told to expect operational data imminently.
- **3/31/15** – Fortistar received the cleanup items on the terms of the LADWP PPA and executed the contract.
- **4/9/15** – Receipt of fully executed PPA from LADWP for Lopez project. **It is important to note that this was a requirement for financing of the project.**
- **4/22/15** – Fortistar requested quote from Miratech for SCR system.

5

- **4/29/15** – Fortistar received quote from Miratech for SCR system.
- **6/2/15** – Fortistar received a revised quote for a catalytic guard from DCL based on ongoing discussions with the vendor.
- **6/12/15** – Fortistar received revised quote from Aerinox for SCR system based on ongoing discussions with the vendor.
- **6/19/15** – Updated separate quotes received from DCL and Aerinox. **In spite of initial statements about warranty structure and specific requests from Fortistar for confirmation of the "complete" warranty by DCL, these separate quotes did not provide the warranty that Fortistar anticipated from DCL.**
- **6/24/15** – Proposal received from Willexa for alternative gas conditioning system. Evaluation of the proposal is ongoing.
- **7/1/15** - Fortistar provided comments back to DCL on technical and commercial issues in the 6/19/15 proposal. Negotiations are ongoing.
- **7/2/15** – Fortistar requested quote from Parker for gas conditioning system.
- **7/9/15** – Fortistar's Engineering and Construction Director attended SCAQMD's 1110.2 workshop.
- **7/22/15** – Fortistar met with SCAQMD's permitting staff to review the feasibility of permitting DCL's approach to handling the off-gas.

6

Responses to Letter #1

Response 1-1
SCAQMD appreciates your comment letter submittal for the proposed amendments to Rule 1110.2. The extension of the final compliance date to January 1, 2018 for operators of demonstration projects was provided because these operators, in fact, commenced the demonstration projects several years ago. Demonstration projects may require additional time for the testing and maturation of newer technology to the point that it could be considered achieved in practice. Although Fortistar, through discussions with staff and in the working group meetings, has initiated moving forward with the installation at one of its facilities, it is not a demonstration project and therefore cannot be granted additional time until January 1, 2018 to comply. The rule proposal provides, however, additional time with the payment of a compliance flexibility fee in quarterly increments.

Response 1-2
As stated in the response to comment 1-1, we acknowledge and appreciate the steps that Fortistar has taken to implement the rule requirements at its facilities.

Response 1-3:
SCAQMD staff acknowledges and appreciates the work that Fortistar has done in pursuing the installation of controls at the Lopez facility. As stated in the response to comment 1-1, additional time beyond the January 1, 2017 deadline can be provided upon the payment of a compliance flexibility fee in quarterly increments. The commenter states that more time is needed to ensure reliable functioning during a shake out period. During the rule making for the 2012 amendments to Rule 1110.2, provisions were added that would extend the averaging time for emissions up to a monthly average for the first four months of operation specifically to address and startup issues. This is contingent on the engine achieving a concentration level more than 10% below the rule limits, as proven in other achieved-in-practice installations. After the first four months of startup operation, a 24-hour average can be used if this high level of performance can be achieved.

Response 1-4:
The commenter states that it would be difficult and uneconomic to install controls at the Prima facility because the PPA it had entered into would make it financially difficult to come up with the revenue required for the installation of engine controls. While this may be the case for this facility, staff feels that there should ~~must~~ have been an expectation in 2008 when the PPA was initiated that the engines at that location would be subject to controls. During the rule making for the 2008 amendments to Rule 1110.2, which occurred in 2007, the initial compliance deadline for biogas engines would have been July 1, 2012, contingent on the completion of a technology assessment. Unexpected delays ~~invalidated this compliance date, which~~ resulted in another rule development to re-establish the biogas engine compliance deadline for January 1, 2016. It is the opinion of staff that the operator had full knowledge of future ~~what was coming in terms of a~~ compliance deadlines, and in ~~for the best~~ interest of public health, staff has established the proposed compliance deadline for higher polluting biogas engines.

Comment Letter #2 – Eastern Municipal Water District, August 13, 2015

EASTERN MUNICIPAL WATER DISTRICT
SINCE 1950

August 13, 2015

Dr. Barry Wallerstein, Executive Officer
South Coast Air Quality
Management District
21865 Copley Drive
Diamond Bar, California
91765

Dear Mr. Wallerstein:

SUBJECT: **Comments on the Proposed Amended Rule 1110.2 Emissions from Gaseous and Liquid-Fueled Engines dated July 29, 2015**

The Eastern Municipal Water District (EMWD) appreciates this opportunity to provide comments on the Proposed Amended Rule 1110.2. EMWD operates 54 prime natural gas engines and four digester gas/dual fuel engines to provide potable water and water reclamation services to 755,000 people in a service area of 542 square miles. As the provider of both water and wastewater reclamation services, EMWD is responsible for effectively managing its resources economically while being a good neighbor to the community.

2-1

Please consider the following comments:

1. EMWD greatly appreciates the South Coast Air Quality Management District (SCAQMD) staff efforts to address our concerns regarding the biogas engine compliance date. EMWD continues to implement demonstration projects and invest our resources to advance new and unproven technology, which we hope will provide cost-effective options for future biogas engine applications.

2. EMWD is concerned with the ranges and limitations for breakdowns and emission checks proposed in Rule 1110.2 (f)(1)(D)(v)(I) thru (V). SCAQMD has adopted the most restrictive air pollution rules in the United States, including a comprehensive breakdown rule and engine inspection and monitoring (I&M) program. Despite this comprehensive compliance program, the proposed language essentially imposes undue increased

2-2

Mailing Address: Post Office Box 8300 Perris, CA 92572-8300 Telephone: (951) 928-3777 Fax: (951) 928-6177
Location: 2270 Trumble Road Perris, CA 92570 Internet: www.emwd.org

enforcement towards operators in the South Coast Air Basin who have already implemented frequent inspection, monitoring and maintenance of engines as required by the current rule. The impact from the proposed rule may result in financial cost to engine operators due to enforcement actions but will not decrease current emission levels in the basin as breakdowns are usually due to unforeseen problems with engines. In addition, during previous rule amendment discussions, SCAQMD staff observed and acknowledged that the air-to-fuel ratio is crucial for maintaining compliance and that there are limitations with stationary technology in which there is signal drift for unknown reasons and that oxygen sensor response can diminish over time. As discussed in the 2008 Rule 1110.2 staff report, the I&M program which includes frequent diagnostic emission checks, was added to the rule to identify and address emission problems in between source tests. Recognizing the limitations of the available technology for stationary engines, it is our understanding that these diagnostic emission checks were not intended to be used as enforcement as presented in the proposed rule.

2-2 cont.

EMWD is supportive of the biogas engine provisions contained in the Proposed Amended Rule; however EMWD is concerned that the proposed breakdown and emission check provisions will delay the adoption of the revised biogas engine compliance dates. Without these compliance date revisions, EMWD may be unable to operate our biogas engines despite our efforts to achieve the proposed emission limits through demonstration projects. Despite our strong desire to adopt these revisions, we are deeply concerned about the proposed breakdown and emission check provisions. As a result, we respectfully request that the rule revision process be bifurcated to ensure biogas engine provisions can be adopted as planned, while separately assessing the SCAQMD proposed amendments to address EPA's concerns. This approach will allow EMWD to complete our biogas engine demonstration efforts and retrofits, while allowing all stakeholders enough time to carefully assess SCAQMD response to EPA's concerns.

2-3

Thank you in advance for considering our comments above and for the opportunity to comment. If you have any questions, please feel free to contact Al Javier at (951) 928-3777 extension 6327 or at javiera@emwd.org.

Sincerely,

Jayne E. Joy, P.E
Director of Environmental and Regulatory Compliance

JJ/ARJ:tlg

cc:
Dr. Philip Fine, SCAQMD
Jill Whynot, SCAQMD
Joe Cassmassi, SCAQMD
Records Management, EMWD

Responses to Letter #2

Response 2-1:
SCAQMD acknowledges EMWD's commitment to demonstrating new technology and appreciates the effort put forth in reducing emissions from biogas engines.

Response 2-2:
The commenter expresses concern on the staff proposal regarding engine breakdowns and concentration limits proposed for both diagnostic emission checks and for breakdowns that was presented at the July 29, 2015 Public Workshop. Since that time, staff has worked with stakeholders to further refine the rule language. It has proposed concentration thresholds for gross emissions due to breakdowns for rich-burn engines, lean-burn engines, and biogas engines. If a diagnostic emission check finds emissions below these thresholds, it will not count against the quarterly incidence limit of three. The concentration thresholds were based on actual data collected from portable analyzer testing conducted by staff during the 2008 amendments to Rule 1110.2. In addition, staff asked engine operators for data to support these threshold concentration levels. We acknowledge that air-fuel ratio controller drift occurs quite frequently and that these events would not be categorized as breakdowns if the emissions do not exceed the thresholds proposed in the rule. The existing inspection and monitoring provisions in the rule for diagnostic emission checks address signal drift and instances when the oxygen sensors are replaced.

Response 2-3:
The commenter requests a bifurcation of the rule amendments so that the biogas provisions are adopted first, while providing more time to amend the breakdown provisions. Unfortunately, EPA has expressed to staff that not addressing its concerns during this rulemaking will force the limited disapproval of the rule and begin a sanction clock.

Comment Letter #3 – Southern California Alliance of Publicly Owned Treatment Works (SCAP), August 14, 2015

SCAP
SOUTHERN CALIFORNIA ALLIANCE OF PUBLICLY OWNED TREATMENT WORKS

August 14, 2015

Dr. Barry Wallerstein, Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765

Dear Dr. Wallerstein:

Re: Comments on Proposed Amended Rule 1110.2

The Southern California Alliance of Publicly Owned Treatment Works (SCAP) appreciates this opportunity to provide comments on Proposed Amended Rule 1110.2. SCAP represents 83 public agencies that provide essential water supply and wastewater treatment to nearly 19 million people in Los Angeles, Orange, San Diego, Santa Barbara, Riverside, San Bernardino and Ventura counties. SCAP's wastewater members provide environmentally sound, cost-effective management of more than two billion gallons of wastewater each day and, in the process, convert wastes into resources such as recycled water and renewable energy.

SCAP greatly appreciates the proposed biogas engine compliance date extension. We do have a minor comment regarding the compliance date, which is described below. While we support the revised biogas engine provisions, our members are troubled by the proposed breakdown provisions. We believe this issue stems from EPA's May 22, 2015 SSM SIP Call, and since it has much wider industry ramifications than just the Rule 1110.2 universe of sources, it should be carefully assessed by SCAQMD legal staff and then fully vetted by all impacted sources. Considering the proposed breakdown provisions were first provided to stakeholders on July 9, 2015, SCAP recommends that the rule be bifurcated to ensure the biogas engine provisions can be adopted quickly, while separately and deliberately assessing how best to respond to EPA's evolving SSM policy.

3-1

Biogas Engine Discussion:
SCAP appreciates SCAQMD staff's efforts to address our concerns regarding the biogas engine compliance date. As you are aware, it is challenging to implement new biogas engine technology to

3-2

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Encinitas, CA 92024-1565
Fax: 760-479-4881 Tel: 760-479-4880 Website: www.scap1.org Email: info@scap1.org

Dr. Barry Wallerstein August 14, 2015

achieve the lower emission limits. Our members have expended a tremendous amount of public resources to advance unproven technology, which we hope will provide cost-effective options for future biogas engine applications. While the proposed extension until January 1, 2018 for Eastern Municipal Water District and the City of San Bernardino is absolutely essential, we believe that Orange County Sanitation District (OCSD) should also be specifically identified in the rule. Although OCSD commenced construction on their retrofit project prior to other agencies, large complex projects can experience unforeseen problems. Based upon OCSD's early and good-faith efforts, we request the same extension be afforded to this public agency as well.

3-2 cont.

SSM Breakdown Discussion:

We have been informed that EPA objects to the existing Rule 1110.2 breakdown provisions. To better understand this objection, and because EPA has not provided any written comments, we contacted EPA staff and obtained some useful feedback. EPA confirmed that their concerns regarding the existing breakdown provisions are derived from the SSM litigation and the resulting SIP Call [Federal Register / Vol. 80, No. 113 / June 12, 2015]. This EPA action requires identified states and air districts to submit corrective SIPs by November 22, 2016. However, SCAQMD is not included in this SIP Call.

Based upon our conversations with EPA, we believe that there may be various approaches to address EPA's new SSM policy. In fact, EPA's SIP Call indicates that states and local agencies are allowed to issue their own enforcement discretion criteria, but such criteria cannot be binding on the United States or any citizens group. Unfortunately, EPA didn't provide much guidance explaining how to implement this new policy. In fact, the situation is further complicated by litigation that has been filed further challenging EPA's new SSM policy. What is clear though is that this major national policy is intended to address bad actors in states with weak pollution control requirements. SCAQMD has adopted the most restrictive air pollution rules in the United States, including a comprehensive breakdown rule, so we cannot believe that breakdowns in the South Coast Air Basin could cause significant emissions like those outlined by the Sierra Club's petition to the EPA. Bearing in mind that SCAQMD is not identified in the SIP Call, we believe that we have time to carefully assess EPA's new SSM policy rather than rushing to adopt a rule based solely on verbal feedback from EPA.

3-3

Conclusion:

SCAP is supportive of the biogas engine provisions contained in the proposed amended rule, with a very minor modification. Our members are concerned that the proposed breakdown provisions will side-track the adoption of revised biogas engine compliance dates. Without these revisions, public agencies that have acted in good-faith to achieve the proposed emission limits may be unable to operate their biogas engines. Despite our strong desire to adopt these revisions, we are deeply concerned about the proposed breakdown provisions. As a result, we respectfully request that the rule revision process be bifurcated. This approach will allow our members to complete their biogas engine retrofits, while allowing all stakeholders enough time to carefully assess EPA's new SSM policy.

3-4

2

Dr. Barry Wallerstein August 14, 2015

Thank you for the opportunity to comment on the proposed amended rule. Please do not hesitate to contact Mr. David Rothbart of the Los Angeles County Sanitation Districts should you have any questions at (562) 908-4288, extension 2412.

Sincerely,

John Pastore, Executive Director

cc:
Dr. Philip Fine, SCAQMD
Jill Whynot, SCAQMD
Joe Cassmassi, SCAQMD

3

Responses to Letter #3

Response 3-1:
The commenter expresses concerns regarding the proposed breakdown provisions and requests that the rule be bifurcated to adopt the biogas provisions while separately assessing how to respond to EPA's concerns with breakdowns. Unfortunately, EPA has expressed to staff that not addressing its concerns during this rulemaking will force the limited disapproval of the rule and begin a sanction clock.

Response 3-2:
The comment requests that Orange County Sanitation District (OCSD) also be included among those facilities that implemented demonstration projects, based on its early commencement of technology demonstration, and be given an additional year to comply with the emission requirements without payment of a fee.

Staff has agreed with the comment and will include OCSD in the proposed subparagraph (d)(1)(F) to give this facility the additional time.

Response 3-3:
The comment refers to EPA's startup, shutdown, and malfunction (SSM) litigation and resulting SIP call, which SCAQMD was not a part of. In addition, the commenter states that staff should not rush to adopt a rule based solely on verbal feedback from EPA.

Staff has spoken extensively with EPA on many occasions, beginning early this year on this matter. Although SCAQMD was not a part of the SIP call that the commenter refers to, it faces a limited disapproval of the rule that was amended in 2010 if the breakdown issues are not addressed. Staff has proposed rule language that EPA says will satisfy its concerns in limiting the amount of excess emissions from breakdowns by requiring enforcement action if the proposed quarterly incidence limit is surpassed. Furthermore, EPA's final action which was released on June 12, 2015 is considered binding rulemaking and not simply guidance.

Response 3-4:

This comment duplicates the suggestions expressed in Comments 3-2 and 3-3. See Responses 3-2 and 3-3.

Comment Letter #4 – California Council for Environmental and Economic Balance (CCEEB), August 17, 2015

California Council for Environmental and Economic Balance
101 Mission Street, Suite 1440, San Francisco, California 94105
415-512-7890 phone, 415-512-7897 fax, www.cceeb.org

August 17, 2015

Dr. Philip Fine
Deputy Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765

RE: Comments on Proposed Amended Rule 1110.2 - Emissions from Gaseous- and Liquid-Fueled Engines

Dear Dr. Fine:

On behalf of the members of the California Council for Environmental and Economic Balance (CCEEB), we wish to provide you with comments on one aspect of Proposed Amended Rule 1110.2 (PAR 1110.2). CCEEB supports the comments of the Southern California Alliance of Publicly Owned Treatment Works (SCAP) in its letter of August 14, 2015 (attached), specifically the request for a bifurcation of the proposal by pulling out proposed changes to the breakdown provisions. While CCEEB has not been active in discussions regarding the specifics of the biogas engine provisions, we too are concerned with the proposed breakdown provisions. 4-1

We understand that the changes to the breakdown provisions are possibly the result of EPA's May 22, 2015 SSM SIP Call. While the provisions as proposed in PAR 1110.2 are a concern, we have further concerns should similar language be added to other rules. If this were to occur, the impact could be quite significant to our members. 4-2

We support SCAP's call for a bifurcation of the proposal. This would allow time for staff to work with all stakeholders who could be impacted by changes to SSM provisions. 4-3

Dr. Philip Fine
August 17, 2015
Page 2

Thank you for considering our views. Please do no hesitate to call me at 415-512-7890, extension 115, should you wish to discuss further,

Sincerely,

William J. Quinn
Vice President and Chief Operating Officer

cc: Jill Whynot
Joe Cassmassi

Responses to Letter #4

Response 4-1:

The comment supports those provided by SCAP in its August 14, 2015 comment letter requesting bifurcation of the proposal by pulling out the proposed changes to the breakdown provisions. As stated in the responses to the comments submitted by SCAP, staff is obligated to comply with EPA's requirements. Otherwise, the SCAQMD will be faced with a limited disapproval of the rule and the start of a sanction clock. Staff feels that the breakdown provisions as proposed are reasonable and will prevent excess emissions from repeated engine breakdowns.

Response 4-2:

The comment states that the proposed breakdown provisions are a result of the May 22, 2015 SIP call and that similar language will be added to other rules. Staff was made aware of the potential limited disapproval of the rule long before the SIP call and has worked with EPA to develop proposed rule language that would make the rule fully approvable. EPA has stated that SCAQMD Rule 430, which is not SIP approved, will be disapproved shortly. For other rules, approvability concerns may be handled individually by rule, or globally with alternatives to Rule 430.

Response 4-3:

The comment duplicates the suggestions expressed in Comment 4-1 and 4-2. See Responses 4-1 and 4-2.

Comment Letter #5 – Karl Lany, Montrose Environmental, August 18, 2015

Kevin Orellana

From: Karl Lany <klany@montrose-env.com>
Sent: Tuesday, August 18, 2015 8:04 PM
To: Joe Cassmassi
Cc: Philip Fine; Kevin Orellana; Gary Quinn
Subject: Proposed Rule 1110.2
Attachments: Karl Lany.vcf

Hello Mr. Cassmassi,

Please excuse my communication via email, rather than a more formal letter regarding proposed Amended Rule 1110.2.

I was greatly encouraged by SCAQMD's revised strategy for dealing with excess emissions that may be observed during 150 hr and 750 hr monitoring events, and I thank SCAQMD for giving consideration to the concepts presented by the regulated community during the July 29th workshop . The language initially proposed on July 29 present unreasonable consequences for operators and ignore the mutual understanding of both SCAQMD and the regulated community that served as the foundation of the monitoring program. 5-1

I look forward to seeing SCAQMD's revised proposal, but in the meantime I offer the following comments that I hope you will take into consideration as you finalize rule language:

Definitions

Because SCAQMD's new proposal introduces the term "diagnostic emissions check", it seems appropriate to incorporate a definition of the term into the rule. Based upon today's presentation, I understand that the provision that would excuse exceedances from the three occurrence limit is intended to apply to the 150 hr and 750 hr monitoring events. It should also apply to other voluntary checks such as those that may occur during engine maintenance and tune-up operations. Existing language, however, refers to the 150 hr and 750 hr monitoring events as "emissions checks" and by introducing the word "diagnostic" SCAQMD may lead one to incorrectly assume that the provisions you are proposing apply to maintenance activities, but not the 150 hr and 750 hr monitoring events or other voluntary actions. 5-2

Three Occurrence Standard

During today's meeting, SCAQMD indicated that the three occurrence standard would apply to any combination of NOx and CO excursions. I question if such an interpretation is indeed reasonable. It seems that once an engine's performance starts to drift from optimal conditions, steps taken by the operator to correct for one pollutant can lead to an excursion of another pollutant and if such corrective action requires intervention for more than just a single day, the three occurrence threshold may be more likely to be crossed simply due to those corrective actions. I suggest that the three occurrence threshold should be applied independently to each pollutant. 5-3

Thank you for considering these comments. I am happy to discuss if you like.

MONTROSE ENVIRONMENTAL

Karl A. Lany
Senior Vice President
Regulatory Compliance Services
SCEC Air Quality Specialists
an affiliate of Montrose Environmental Group, Inc.
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Responses to Letter #5

Response 5-1

The commenter is greatly encouraged at the revised strategy for dealing with excess emissions observed during diagnostic emission checks subsequent to the Public Workshop. Staff appreciates the comment and is pleased that the dialogue with the regulated community has resulted in favorable results.

Response 5-2

The comment recommends a definition for the term "diagnostic emission check" to differentiate between testing done due to monitoring and testing done for maintenance activities. As proposed, the rule would excuse exceedances from the three occurrence limit for diagnostic emission checks, but it should also apply to other voluntary checks such as maintenance operations.

The use of the term diagnostic emission check is used for consistency between other combustion rules, primarily Rules 1146 and 1146.1 for boilers. Diagnostic emission checks are performed for a variety of reasons, inclusive of those that the commenter has pointed out. They are performed to both verify compliant operation and to ensure that emission exceedances are resolved. Staff feels that a definition is not necessary. Staff would also like to clarify the comment that excuses emission exceedances from the three occurrence limit for diagnostic emission checks. If a diagnostic emission check (whether conducted as part of periodic monitoring or maintenance) finds emissions under the thresholds listed in the proposed rule, then it does not count against the incidence limit. However, if a diagnostic emission check finds emissions above the proposed thresholds and it is determined to be caused by a breakdown, it will need to be reported as a breakdown event to the SCAQMD. If SCAQMD enforcement staff determines that the event occurred within the control of the operator, then it will be an automatic violation. If SCAQMD enforcement staff determines that the event occurred outside the control of the operator, then it will count against the per calendar quarter incidence limit. A definition of breakdown has been included as part of the proposed amendments.

Response 5-3

The commenter suggests that the proposed breakdown per calendar quarter incidence limit should apply independently to each pollutant because corrective action taken for one pollutant can lead to an excursion of the other, especially if the corrective action takes more than one day. The rule language proposes breakdown provisions per incident for any combination of pollutants. If corrective action results in exceedant diagnostic emission checks for another pollutant, the obligation is on the operator to demonstrate to SCAQMD enforcement staff that the exceedant readings can be attributed to the same incident.

Comment Letter #6 – SoCalGas, August 19, 2015

SoCalGas comment letter
August 19, 2015

SoCalGas

A Sempra Energy utility

Daniel R. McGivney
Environmental Affairs Program Manager
Energy and Environmental Affairs

1981 W. Lugonia Ave., SC8013
Redlands, California 92374-9796

tel: 951-225-2958
email: dmcgivney@semprautilities.com

August 19, 2015

Mr. Joseph Cassmassi
Planning & Rules Director
South Coast Air Quality Management District
21865 East Copley Drive
Diamond Bar, CA 91765

VIA EMAIL: jcassmassi@aqmd.gov

RE: South Coast Air Quality Management District Proposed Amended Rule 1110.2

Dear Mr. Cassmassi:

The Southern California Gas Company (SoCalGas) appreciates this opportunity to provide comments regarding the South Coast Air Quality Management District's (District) proposed amendments to Rule 1110.2 (PAR 1110.2) which regulate emissions from gaseous and liquid fueled engines. The comments that follow are based upon the District's July 29, 2015 draft PAR 1110.2 and associated draft Staff Report. 6-1

The proposed amendments are focused in two areas: amendments to provide additional time for biogas fueled engines to attain emission limits specified in section (d)(1)(C) and amendments affecting section (f)(1)(D)(v) regarding breakdown and emission check procedures. SoCalGas' comments are focused on the later proposed amendments.

In various meetings and discussions with District staff beginning in early July, it is SoCalGas' understanding that the proposed amendments regarding the breakdown provisions are in response to concerns expressed by the United States Environmental Protection Agency (EPA) in regard to Rule 1110.2 State Implementation Plan (SIP) approvability affected by a recent court case decision [*NRDC v. EPA*, 749 F.3d 1055 (D.C. Cir. 2014)] affecting EPA's Start-up, Shut-down and Malfunctions (SSM) policy, resulting in the ensuing May 22, 2015 SIP Call [Federal Register Volume 80, Number 113 (Friday, June 12, 2015)]. SoCalGas has also discussed the proposed revision with EPA staff and understands that there is currently no schedule or deadline associated with this issue and that EPA is open to any justifiable solution. It is also SoCalGas' understanding that this issue may affect a much broader range of equipment/sources. 6-2

1

SoCalGas comment letter
August 19, 2015

Considering the potentially broad impact of the SSM issue upon regulated entities and equipment, and the particular complexity of Rule 1110.2, SoCalGas formally requests that the District bifurcate these proposed amendments, adopting the biogas related amendments on the current schedule and deferring any amendments regarding breakdowns/emission checks and SSM policy until a later date such that District staff and affected industry can work together to both better understand the specific issue(s) that EPA has with Rule 1110.2 (as it is SoCalGas' understanding that only verbal communication between EPA and the District has occurred to date) and identify possible approaches that could resolve the issue(s).

6-3

SoCalGas looks forward to continuing this dialog and a mutually favorable resolution of this issue. Again, SoCalGas formally requests that the biogas and breakdown/SSM related amendments be bifurcated into separate rulemaking activities, with the breakdown/SSM amendment process postponed to a later date. Should there be any questions, please contact me at 951-255-2958 or at dmcgivney@semprautilities.com. Thank you for consideration of this request.

Sincerely,

Daniel R. McGivney

Daniel R. McGivney
Environmental Affairs Program Manager
Energy and Environmental Affairs

cc: Philip Fine, Ph.D., SCAQMD
Jill Whynot, SCAQMD

2

Responses to Letter #6

Response 6-1

This introductory comment explains that this comment letter was submitted based on the Preliminary Draft Staff Report and rule language made available on July 29, 2015. Thus, responses to the specific comments are presented in Responses 6-2 and 6-3.

Response 6-2

The comment makes reference to EPA's court decision and SIP call as the reason for the proposed breakdown provisions. The commenter states that it has discussed the proposed rule revision with EPA staff and understands that there is currently no schedule or deadline associated with this issue and that EPA is open to any justifiable solution. In addition, this issue may affect other equipment and sources under SCAQMD rules.

Staff disagrees with the statement that there is no schedule or deadline regarding the proposed amendments. EPA had explicitly expressed to staff that if this rule is amended without addressing the excess emissions related to an uncapped number of breakdowns, the rule will not be approved, which will result in the triggering of a sanction clock. The proposed amendments for biogas engines are necessary to extend the compliance deadline from January 1, 2016 to January 1, 2017, so if the breakdown provisions are not addressed, then there will be a limited disapproval for this rule which is highly undesirable. EPA is open to any justifiable solution and is in agreement with the staff proposal that places a cap on the number of breakdowns per calendar quarter and the associated excess emissions. EPA is also in agreement with the Industry proposal which would subject operators to federal enforcement for breakdowns and would result in an approvable rule. The Industry proposal does not offer any protection from Federal enforcement and citizen lawsuits for excess emissions from breakdowns. EPA has stated that Rule 430 is not SIP approvable~~ed~~ and an official statement will be forthcoming. In the meantime, EPA has addressed enforceability issues on a per rule basis.

Response 6-3

The commenter requests a bifurcation of the proposed amendments, adopting the biogas provisions on the current schedule and deferring the breakdown provisions until a later date since EPA and SCAQMD's verbal communications are the only justification for addressing the breakdown provisions.

As stated in the responses to the comments submitted by SCAP and CCEEB, staff is obligated to comply with EPA's requirements. Otherwise, the SCAQMD will be faced with a limited disapproval of the rule and the start of a sanction clock. EPA's final action which was released on June 12, 2015 is considered binding rulemaking and is not simply guidance. Staff feels that the breakdown provisions as proposed are reasonable and will prevent excess emissions from repeated engine breakdowns, which will result in a SIP-approvable rule.

Comment Letter #7 – Mesa Water District, October 7, 2015

MesaWater DISTRICT®

Dedicated to Satisfying our Community's Water Needs

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MesaWater.org

October 7, 2015

Kevin Orellana
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Subject: Comments to Proposed Amended Rule (PAR) – Rule 1110.2
Mesa Water District

Dear Mr. Orellana,

Mesa Water District (Mesa Water®) is a special district that provides water service to 108,000 customers in an 18 square-mile area. Mesa Water® serves most of Costa Mesa, parts of Newport Beach, and some unincorporated areas of Orange County, including the John Wayne Airport. 7-1

Mesa Water® relies on internal combustion engines for the distribution of drinking water in the service area. These engines, which support the critical infrastructure for water distribution, are subject to South Coast Air Quality Management District (SCAQMD) Rule 1110.2. Mesa Water® understands that the SCAQMD is in the process of revising certain portions of Rule 1110.2 and is currently seeking comments from the stakeholders in the rule amending process. Mesa Water® is submitting this comment letter to address our concerns on the Proposed Amended Rule (PAR) 1110.2.

In order to respond to the United States Environmental Protection Agency (USEPA) Startup, Shutdown, and Malfunction (SSM) policy, the SCAQMD is seeking comments from the stakeholders to address the breakdown procedures. Mesa Water® understands that an engine that deviates from the Rule 1110.2 emission limits or permit conditions should not continue operating as a result of a breakdown. Currently, Rule 1110.2 allows an engine to continue operating after a failed portable analyzer emission check for 24 hours or by the end of the operating cycle, whichever comes sooner. The SCAQMD is considering adding provisions in the rule to discourage engine operators from continuing operation if an engine violates emission limits. This will impact Mesa Water's® ability to provide reliable water service to its customers as Mesa Water® diversifies its energy sources for emergency purposes. Mesa Water®'s reservoirs and some well sites are powered by natural gas engines. 7-2

In order to address the Rule 1110.2 breakdown policy, on September 15, 2015, at the Rule 1110.2 Working Committee Group Meeting, SCAQMD staff proposed the following: 7-3

MesaWater DISTRICT®

Dedicated to Satisfying our Community's Water Needs

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General Manager

Phil Lauri, P.E.
Assistant General Manager

Coleen L. Monteleone
Assistant General Manager
District Secretary

Andrew N. Hamilton
District Treasurer

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Legal Counsel

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MesaWater.org

- *If a diagnostic emission check finds excess emissions that are the result of a breakdown, then it will count as a breakdown and it will need to be reported to the SCAQMD*
- *A breakdown is deemed valid by SCAQMD compliance staff if the facility has proven that it occurred beyond its control*
  - *Will not count as a strike*
- *A breakdown that is not verifiable by SCAQMD compliance staff or a breakdown where emissions cannot be measured or quantified will be counted as a strike*

Mesa Water® would like to comment on the third bullet item above, which states that a breakdown that cannot be verified by SCAQMD compliance staff or a breakdown where emissions cannot be measured or quantified will be counted as a strike.

Mesa Water® would like to request SCAQMD Executive Staff consider revising the third bullet item to remove the language that states when emissions cannot be measured or quantified, it will be counted as a **strike**. For example, if an incident occurs outside of Mesa Water's® normal business hours, a portable analyzer emission check may be delayed and not completed within the timeframe required to comply with the provision of the breakdown rule. 7-3 cont.

Each engine operated by Mesa Water® has an automatic shutdown feature installed that will shut down an engine if there is a potential for severe damage associated with faults or alarms. Common engine shutdown faults or alarms are a high catalyst inlet temperature alarm, an ignition fault, intake manifold pressure, and fuel system failure. The purpose of this fail-safe control mechanism is to prevent the engine from operating when it could lead to catastrophic failures. As a result of the shut down due to possible detrimental engine failure, there will not be an opportunity to perform a portable analyzer test. Under the proposed rule, the incident can easily be counted as a strike for that quarter which is unreasonable. Allowing an engine to continue operating following a fault or an alarm may be catastrophic to the engine. Thus Mesa Water® strongly feels that the proposed language should exclude incidents that could lead to potential catastrophic engine failure. The following language revision is proposed:

- *A breakdown that is not verifiable by SCAQMD compliance staff ~~or a breakdown where emissions cannot be measured or quantified~~ will be counted as a strike*

Mesa Water® would also like to request SCAQMD Executive Staff provide a definition for **verifiable breakdown incident**. Mesa Water® feels that a definition identifying the assessment method, metrics, quantity, etc. will provide clarity in maintaining compliance. 7-4

MesaWater
DISTRICT®

Dedicated to
Satisfying our Community's
Water Needs

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75

Additionally, Mesa Water® would like to request SCAQMD Executive Staff add a definition for a **diagnostic emission check** for clarity. Rule 1110.2 specifies a frequency of weekly/monthly (or every 150/750 hours) for portable analyzer emission checks. Mesa Water® performs diagnostic emission checks following an Air-to-Fuel Ratio Controller (AFRC) alarm, parameter out of range, or other deviations. It appears that the SCAQMD is proposing to replace the current language for "portable analyzer emission check" to "diagnostic emission check." For such reason, Mesa Water® believes that adding a definition for a proposed diagnostic emission check will provide clarity in the rule.

Please feel free to contact Kaying Lee, Water Quality and Compliance Supervisor, at (949) 207-5491 if there are further questions.

Sincerely,

Phil Lauri
Assistant General Manager
Mesa Water District

cc: Paul Shoenberger, General Manager
Tracy Manning, Assistant Water Operations Manager
District File

Responses to Letter #7

Response 7-1

This introductory comment explains that this comment letter was submitted based on the proposed amendments to Rule 1110.2. Thus, responses to the specific comments are presented in Responses 7-2 through 7-5.

Response 7-2

The commenter is responding to SCAQMD's request for comments from stakeholders regarding EPA's startup, shutdown, and malfunction (SSM) policy. Currently, Rule 1110.2 allows an engine to continue operating after a failed portable analyzer emission check for 24 hours or by the end of the operating cycle, whichever is sooner. The commenter adds that SCAQMD's proposed provisions discourage engine operators from continuing operation if an engines violates emission limits, which impacts the commenter's ability to provide reliable water to its customers.

Staff disagrees with this interpretation that the SCAQMD allows engines to operate in violation of emission limits. The proposed rule language states that in the event of a breakdown, the operator shall correct the problem as soon as possible and demonstrate compliance, or shut down an engine by the end of the operating cycle, or within 24 hours, whichever is sooner. The intent is to prevent engines that are out of compliance to continue to emit excess emissions of pollutants into the air. Staff believes it is in the best interest of an engine operator to fix a problem that is causing the excess emissions, instead of continuing to operate a defective engine which could lead to even further damage to the unit in addition to those excess emissions. The provisions that the commenter is referring to is existing language from the 2008 amendments which place a limit in the amount of time that an engine can continue to operate in the event of a breakdown or diagnostic emission check which finds emissions in exceedance of the rule or permit limits.

Response 7-3

The comment refers to bullet items presented at the September 15, 2015 working group meeting. Specifically, the commenter expresses concern over the point that breakdowns that cannot be measured or determined will be counted as a strike. The commenter provides example of instances where an incident occurs outside of normal business hours where a diagnostic emission check cannot be conducted, as well as engine faults that preventatively shut down an engine to prevent further damage.

As explained in the draft staff report, for these instances the onus is on the operator to demonstrate that the parameter drift or mechanical failure was caused by something other than a breakdown and that it was out of the operator's control. If it is a breakdown, as now defined in the rule proposal definition, and SCAQMD compliance staff verifies that it was not the result of operator error, neglect, improper operation or improper maintenance procedures, it will count against the quarterly incidence limit. There are provisions in the existing rule for parameters out of range, as the commenter had pointed out, where the operator can correct the problem and demonstrate compliance with a diagnostic emission check within 48 hours of the operator first knowing of the problem. Unexpected engine and control system failures occur occasionally and

as long as the operator can demonstrate and SCAQMD compliance staff can verify that the cause was not operator error, neglect, improper operation or improper maintenance procedures, then it is a breakdown and not subject to violation as long as the per quarter incidence limit is not exceeded.

Response 7-4

The commenter requests a definition for verifiable breakdown incident to provide clarity in maintaining compliance. The existing provisions in SCAQMD rules already provide this clarity. Subparagraph (f)(1)(H) of the existing rule language lists the reporting requirements for breakdowns. These are based on the existing requirements listed in Rule 430, Breakdown Provisions, which the operator must also comply with. For a breakdown incident SCAQMD enforcement staff promptly investigates the site to determine whether an occurrence meets all SCAQMD criteria to qualify as a breakdown.

Response 7-5

The commenter requests a definition for a diagnostic emission check for clarity between emission checks for used for routine monitoring and for parameter deviations. The use of the term diagnostic emission check is used for consistency between other combustion rules, primarily Rules 1146 and 1146.1 for boilers. Diagnostic emission checks are performed for a variety of reasons, inclusive of those that the commenter has pointed out. They are performed to both verify compliant operation and to ensure that emission exceedances are resolved. Staff feels that a definition is not necessary.

Comment Letter #8 – Southern California Association of Publicly Owned Treatment Works, Eastern Municipal Water District, Small Business Alliance, Southern California Gas Company, Southern California Air Quality Alliance, Western States Petroleum Association, Orange County Sanitation District, Los Angeles County Sanitation Districts, Irvine Ranch Water District, City of Corona, Department of Water and Power, City of Riverside Public Works Department, City of San Bernardino Municipal Water Department, Inland Empire Utilities Agency, South Orange County Wastewater Authority, California Independent Petroleum Association, California Association of Sanitation Agencies, Regulatory Flexibility Group, Waste Management, October 15, 2015

Southern California Association of Publicly Owned Treatment Works, Eastern Municipal Water District, Small Business Alliance, Southern California Gas Company, Southern California Air Quality Alliance, Western States Petroleum Association, Orange County Sanitation District, Los Angeles County Sanitation Districts, Irvine Ranch Water District, City of Corona, Department of Water and Power, City of Riverside Public Works Department, City of San Bernardino Municipal Water Department, Inland Empire Utilities Agency, South Orange County Wastewater Authority, California Independent Petroleum Association, California Association of Sanitation Agencies, Regulatory Flexibility Group, Waste Management

October 15, 2015

Dr. Philip Fine, Deputy Executive Officer
Planning, Rules Development & Area Sources
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765

Dear Dr. Fine:

Comments on Proposed Amended Rule 1110.2 –
Sections Related to Breakdowns/Malfunctions

We appreciate this opportunity to provide comments on Proposed Amended Rule 1110.2. Our coalition fully supports SCAQMD Governing Board's adoption of the proposed biogas amendments allowing the affected parties additional time to come into compliance with this rule. However, we are concerned about the proposed changes to the breakdown provisions. While seemingly benign in the context of Rule 1110.2, it is our opinion that they represent a fundamental change in SCAQMD enforcement policy by potentially altering how breakdowns are handled for all industries, especially industries that currently utilize Rule 430. Because of these widespread implications, we respectfully request that the rule be bifurcated to facilitate the approval of proposed biogas provisions, while allowing time for a thorough assessment of the policy issues, especially in light of EPA's new and evolving startup, shutdown, and malfunction (SSM) policy. C8-1

We understand that SCAQMD staff is proposing changes to the Rule 1110.2 breakdown provisions, in response to EPA's concerns about the July 9, 2010 amended version of Rule 1110.2, which was submitted for SIP approval in 2014. EPA believes that the existing breakdown provisions are inconsistent with new national SSM policy, and would prevent full approval of the rule. More specifically, these concerns stem from EPA's new and evolving SSM policy published in the Federal Register, Vol, 80, No. 113 on June 12, 2015 (36-State SIP Call). SCAQMD staff presented the proposed amended breakdown language on July 9, 2015 at a Rule 1110.2 Public Workshop, which was predominantly attended by biogas engine operators. In effect, the proposed breakdown provisions would establish a new SCAQMD SSM policy that could reach far beyond Rule 1110.2 and be applicable to any equipment operating during a SSM event. C8-2

Document Number: 3483889

As stated, we believe it is premature to proceed with the proposed Rule 1110.2 breakdown provisions until the general policy implications are vetted with all impacted industries. Also, we believe that it is premature to establish a new SCAQMD SSM policy because of two pending appellate court petitions that could affect EPA's national SSM policy: (1) August 11, 2015, U.S. Court of Appeals for the District of Columbia Circuit, Case No. 15-1267 filed by 17 states claiming that "*…EPA erroneously concluded that the following State's EPA approved State Implementation Plans are 'substantially inadequate' with respect to periods of startup, shutdown and malfunction and must be revised.*", and (2), July 8, 2015, U.S. Court of Appeals for the Fifth Circuit, Case No. 15-60424 filed by the State of Texas requesting "*…that the Court review those parts of EPA's Final Rule that apply to the State of Texas, including…four provisions in Texas's approved State Implementation Plan…, which provide affirmative defenses for certain upset events, unplanned events, and opacity events…*" The EPA SSM policy being challenged, itself rose from court challenges by environmental groups. Clearly, EPA's new policy has yet to withstand some significant legal challenges which, if successful by the plaintiffs, will once again alter EPA's SSM national policy. 8-3

In addition to the legal challenges facing EPA's new SSM policy, the policy itself is rather nebulous and is subject to interpretation. For example, "*…The EPA emphasizes that there are other approaches that would be consistent with CAA requirements for SIP provisions that states can use to address emissions during SSM events. While automatic exemptions and director's discretion exemptions from otherwise applicable emission limitations are not consistent with the CAA, SIPs may include criteria and procedures for the use of enforcement discretion by air agency personnel."* At minimum, there is a tremendous amount of flexibility provided to the states. 8-4

In addition, we believe that the proposed breakdown language may be inconsistent with the intent of EPA's new SSM policy outlined in the June 12 Federal Register posting. EPA's policy explains that states and air districts must maintain EPA's authority to enforce and allow citizen suits. The policy calls for SIP revisions to remove deficient provisions, including "*…enforcement discretion provisions that have the effect of barring enforcement by the EPA or through a citizen suit and affirmative defense provisions that are inconsistent with CAA requirements…*" Proposed amended rule language contains provisions that, in our opinion, may not comply with the intent of EPA's policy. 8-5

As outlined, there are significant uncertainties in EPA's national SSM policy due to litigation and policy interpretation difficulties, and any changes to SCAQMD SSM policies are going to impact most industries. In addition, SCAQMD was not included in EPA's 36-State SIP Call. Therefore, rather than rushing to resolve EPA's potential objections at this time, we respectfully request that staff: (1) perform a thorough legal review and analysis of EPA's new policy; (2) assess the validity of pending litigation; and (3) convene a working group to discuss what direction SCAQMD's staff should take on its SSM policy approach. 8-6

Also, we understand that SCAQMD staff would like to provide the Governing Board an EPA approvable rule. However, we believe bifurcation of the rule, so the new biogas engine amendments can be adopted, would be the most prudent approach. We also believe that all options should be kept open, so in the spirit of cooperation, we could support the deletion and modification of the objectionable language, as identified by EPA. Specifically, we recommend modifying paragraph (f)(1)(D)(v)(III) of the rule as follows: 8-7

*"An operator ~~shall not be considered~~ in violation of the emission limits of the rule or in permit conditions, **due to a breakdown or malfunction,** ~~if the operator~~ **shall** comply~~ies~~ with ~~this subparagraph and the reporting requirements of~~ subparagraph (f)(1)(H). Any emission check conducted by the District staff that finds excess emissions is a violation."*

B-7 cont.

We believe such a modification directly addresses the intent of EPA's SSM policy. There are other changes that would be needed to ensure consistency throughout the rule with this approach, but these changes could be worked out quickly. At your earliest convenience, we would like to meet with you and your staff to discuss this proposal, as well as the bifurcation approach.

Thank you for the opportunity to comment on the proposed amended rule. If you have any questions regarding our concerns or recommendations, please do not hesitate to contact David Rothbart at (562) 908-4288, extension 2412.

Sincerely,

David Rothbart, P.E.
Air Quality Committee Chair
Southern California Association of
Publicly Owned Treatment Works
(562) 908-4288, ext. 2412

Bill LaMarr
Executive Director
Small Business Alliance
(714) 778-0763

Curt Coleman
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Environmental Compliance Manager
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Greg Kester
California Association of Sanitation Agencies
Director of Renewable Resource Programs
(916) 446-0388

Responses to Letter #8

Response 8-1

The comment offers support for the adoption of the biogas amendments, but expresses concerns regarding the proposed changes to the breakdown provisions and requests a bifurcation of the rule to facilitate the approval of proposed biogas provisions, while allowing more time to assess EPA's startup, shutdown, and malfunction (SSM) policy.

Staff appreciates the support for the proposed amendments for biogas engine operators. As stated in the responses to the comments submitted by SCAP, CCEEB, and SoCalGas, staff is obligated to comply with EPA's requirements. Otherwise, the SCAQMD will be faced with a limited disapproval of the rule and the start of a sanction clock. EPA's final action which was released on June 12, 2015 is considered binding rulemaking and is not simply guidance. Staff feels that the breakdown provisions as proposed are reasonable and will prevent excess emissions from repeated engine breakdowns, which will result in a SIP-approvable rule.

Response 8-2

The comment refers to the EPA's SSM policy published in the Federal Register on June 12, 2015 that would prevent full approval of Rule 1110.2 and suggests that the SCAQMD will develop a new SSM policy that could reach far beyond Rule 1110.2 and be applicable to any equipment operating during an SSM event.

SCAQMD, for this rule amendment as it pertains to breakdowns, is addressing a recommendation made by EPA to fix areas within the rule that would be disapproved if not addressed. A similar action was taken for Rules 1146 and 1146.1 to prevent the disapproval of those rules. Rule 430, which is currently not SIP-approved, is pending disapproval, according to EPA. As stated in the previous response, staff feels that the breakdown provisions as proposed are reasonable.

Response 8-3

The comment states that because the SSM policy is being challenged legally, it is premature to establish policy with this rule. As stated in the response to Comment 8-1, staff is obligated to respond to EPA's recommendation, despite legal challenges to the SSM policy, because it is binding rulemaking.

Response 8-4

The comment suggests that there is flexibility provided to states in addressing SSM policy. Staff feels that the proposed breakdown provisions are very reasonable and, more importantly, are in agreement with EPA policy.

Response 8-5

The comment suggests that the proposed breakdown provisions do not comply with the intent of EPA policy of removing deficient provisions including enforcement discretion provisions that appear to bar enforcement by EPA or citizens and affirmative defense provisions that are inconsistent with the Clean Air Act or the SSM policy.

Staff disagrees with the commenter's statement. The proposed breakdown provisions satisfy EPA's SSM policy and, furthermore, do not offer enforcement discretion that bars enforcement by EPA or citizens. The proposed language additionally does not provide affirmative defense for operators since there is a cap on the number of breakdown incidents that can occur per calendar quarter and allows for enforcement action if a breakdown is not verifiable.

Response 8-6

The comment states that SCAQMD was not part of EPA's 36-state SIP call and requests that staff performs a thorough legal review and analysis of EPA's SSM policy, assess the validity of pending litigation, and convene a working group to discuss what direction SCAQMD staff should take on its SSM approach.

Although SCAQMD was not explicitly part of the 36-state SIP call, SCAQMD was directed by EPA to correct the rule language that was not consistent with the SSM policy. The SIP call specifically stated that

> "Entities potentially affected by this action include states, U.S. territories, local authorities and eligible tribes that are currently administering, or may in the future administer, EPA-approved implementation plans ("air agencies")."

~~Otherwise, a~~As stated in the response to Comment 8-1, the SCAQMD will be faced with a limited disapproval of the rule and the start of a sanction clock. EPA and SCAQMD have been in discussion regarding this issue since the beginning of this year and despite pending litigation, the SSM policy is binding rulemaking. Please refer to Responses 8-1 and 8-3.

Response 8-7

The comment reiterates the request for the bifurcation of the rule so that the new biogas amendments can be adopted. However, the commenter has offered suggested rule language that would be supported by EPA. The rule language deletes the phrasing that states that an operator shall not be considered in violation if a breakdown incident is corrected and reported.

Staff appreciates the cooperation of Industry and has proposed to provide two versions of the rule for consideration by the Governing Board. The first version is the staff proposal, while the second is the industry proposal which would not provide relief from federal enforcement action if an operator reports a breakdown. As a result, this second version would not shield an operator from federal enforcement and citizen lawsuits since every breakdown would be a federal violation, since Rule 430 is not SIP-approved.

Comment Letter #9 – California Council for Environmental and Economic Balance (CCEEB), October 19, 2015

California Council for Environmental and Economic Balance
101 Mission Street, Suite 1440, San Francisco, California 94105
415-512-7890 phone, 415-512-7897 fax, www.cceeb.org

October 19, 2015

Dr. Philip Fine, Deputy Executive Officer
Planning, Rules Development & Area Sources
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765

RE: PAR 1110.2 and Startup, Shutdown and Malfunction (SSM) Policy

Dear Dr. Fine,

In a letter sent to you on August 17, 2015, the California Council for Environmental and Economic Balance (CCEEB) requested that sections in proposed amended rule (PAR) 1101.2 related to startup, shutdown, and malfunctions (SSM) be bifurcated and addressed in a separate process so that all impacted stakeholders could participate in development of the District's SSM policy. While CCEEB has no direct interest in the biogas engine provisions of 1101.2, the broader SSM policy potentially affects many of our members. 9-1

CCEEB reiterates our request and also asks staff to address and respond to questions and concerns raised by the Southern California Alliance of Publicly Owned Treatment Works (SCAP) and its coalition in their letter from October 15. Like SCAP, we believe that there has not been adequate discussion of potential approaches to the District's SSM policy or consideration of the legal implications stemming from litigation and policy interpretation differences of the federal EPA's new SSM policy. We believe that a bifurcated process could be implemented quickly, with active participation by all interested parties, and so we urge you to take this approach to PAR 1101.2. We hope to discuss this with you further, but in the meantime, please contact me with any questions. 9-2

Sincerely,

Bill Quinn
Vice President and Chief Operating Officer

cc: Jill Whynot
Joe Cassmassi

Responses to Letter #9

Response 9-1

The comment refers to the previous comment letter submitted on August 17, 2015 requesting bifurcation of the rule to address the EPA's and SCAQMD's SSM policy provisions. Please refer to Responses 4-1 through 4-3.

Response 9-2

The comment reiterates the requests of other commenters (SCAP and its coalition) from its October 15, 2015 comment letter. Please refer to Responses 8-1 through 8-7.

Comment Letter #10 – Fortistar Methane Group LLC, October 27, 2015

FORTISTAR METHANE GROUP LLC
One North Lexington Avenue □ White Plains, New York 10601
Tel. (914) 421-4900 □ Fax. (914) 421-0052

October 27, 2015

VIA Overnight Delivery

Barry R. Wallerstein, D.Env., Executive Officer
South Coast AQMD
21865 Copley Drive
Diamond Bar, CA 91765

Dear Mr. Wallerstein:

On behalf of Fortistar Methane Group LLC ("Fortistar") please accept this letter in conjunction with the rule-making process for SCAQMD Rule 1110.2 ("Rule"). As you know, Fortistar has been an active participant in the Rule 1110.2 "Working Group" and we appreciate the Board's collaborative approach relative to the proposed changes to the Rule. 10-1

On August 10, 2015, at the request of SCAQMD staff, Fortistar set forth in detail the steps it has taken to comply with the proposed Rule changes as relates to our MM Lopez Energy LLC ("Lopez) and Prima Deshecha LLC ("Prima") facilities. A copy of that letter is attached hereto.

In an effort to keep staff advised of our progress in connection with our Lopez facility since our August 10th letter, please be advised that our updated path is as follows: 10-2

- **9/3/15** – Staff made recommendation to Fortistar management for purchase of gas conditioning system.
- **10/30/15** - Conclude negotiations with Willexa regarding purchase terms and conditions with the goal of issuing a purchase order for a gas conditioning system.
- **11/13/15** - Submit an application to the SCAQMD for air permit modification.
- **11/23/15** - Electrical separation of Lopez engines to be complete and providing power to LADWP.
- **11/30/15** - Continue negotiations with equipment vendors and recommend procurement of an SCR system.
- **1/15/16** - Issue purchase order for SCR system.
- **7/13/16** - Delivery of gas conditioning system at Lopez anticipated.

1

- **10/10/16 -** System operational for testing following installation.

- **1/1/17 -** Lopez gas conditioning system and SCR system fully operational. **While our plans are to commence operation of the SCR system by this date, we firmly believe that a one-year (i.e. 1/1/18) shakeout period is absolutely required to ensure that the system will reliably operate for the term of the Lopez power purchase agreement with LADWP.**

10-2 cont.

We appreciate your consideration of Fortistar's genuine and substantial efforts in adopting compliance technology and the circumstances which we feel justify an extension of the compliance timelines at two of our Lopez facility. We understand that the rule making process is a complex one and we thank you for your receipt and evaluation of these comments.

10-3

Very truly yours,

Jonathan Maurer
Acting CEO
Fortistar Methane Group LLC

Encl.

cc: Rule Making Staff (via First Class Mail)

2

FORTISTAR METHANE GROUP LLC
One North Lexington Avenue • White Plains, New York 10601
Tel. (914) 421-4900 • Fax. (914) 421-0052

August 10, 2015

BY US POST

Mr. Mark Abromowitz
Board Consultant to Hon. Joseph Lyou
South Coast AQMD

Dear Mr. Abromowitz:

On behalf of Fortistar Methane Group LLC ("Fortistar") please accept this comment letter in conjunction with the rule-making process for SCAQMD Rule 1110.2 ("Rule"). As you know, Fortistar has been an active participant in the Rule 1110.2 "Working Group" and we appreciate the Board's collaborative approach relative to the proposed changes to the Rule.

At the July 2015 Working Group meeting, a draft set of proposed Rule changes were distributed which carve out additional time for compliance to two specific entities – the City of San Bernardino and the Eastern Municipal Water District. We greatly appreciated staff's decision to propose an additional compliance timeframe for these entities based on their early exploration and adoption of technology demonstration projects. We respectfully request that Fortistar and its associated sites subject to the Rule be considered for the same extension based on a similar level of investment and commitment to future compliance with the Rule.

Please know that after reviewing the course of events, it is clear that we have fallen short in sharing with staff the efforts we have taken which would justify such an extension, and are appreciative of your consideration of the information below which includes a description of our sites, our negotiations with equipment suppliers and economic considerations that we feel support our request.

1. **Overview of Fortistar Sites**

Six of Fortistar's project entities are affected by the pending implementation Rule 1110.2. They are:

1. MM Lopez Energy LLC - (Los Angeles County)
2. MM Prima Desheca Energy LLC- (Orange County)
3. Coyote Canyon Energy LLC – (Orange County)
4. NM Milliken Genco LLC – (San Bernardino County)
5. NM Mid Valley Genco LLC - (San Bernardino County)
6. NM Colton LLC – (San Bernardino County)

Of these six facilities, four (Milliken, Mid Valley, Coyote Canyon, and Colton) have either recently been shut down or will shortly be shut down for economic reasons unrelated to Rule

1110.2. The remaining two facilities, Lopez and Prima continue to operate and are the focus of this briefing.

2. Lopez Facility, Los Angeles County

Currently, Lopez has two functioning engines that deliver energy. Lopez was accepted into the LADWP FIT Program in June 2014. Prior to that, it was clear that the project's power purchase agreement, with a ten-year term beginning in 2006, did not generate sufficient cash flow to support the installation of equipment required by Rule 1110.2.

With Lopez's acceptance into the LADWP FIT program in June 2014, Fortistar became actively engaged, investing in plans and specifications that will result in a fully engineered selective catalytic reduction (SCR) system for one of the two engines[1]. We have attached as Exhibit A our efforts to explore and invest in this technology. We are committed to install this system in 2016. After an appropriate shakeout period, the engine will be fully operational and compliant in 2017. Given this timeframe, and our existing investment in this technology, *we would respectfully request the Lopez project be allowed a compliance extension date of January 1, 2018.*

We believe the facts are clear that Fortistar has expended substantial efforts to employing an SRS Rule 1110.2-compliant system. Fortistar initially invested in the analysis of several alternative technologies and, as described below, in 2014 selected DCL International, Inc. ("DCL) which we determined had the highest probability of reliability. DCL was to build a plant for another party that we could review and was also to provide a guarantee on operations. We have since come to learn that the construction project is delayed and the guarantee is different than from what we initially anticipated.

Specifically, Fortistar initiated discussions with equipment suppliers for compliant equipment upgrades in June 2014 including DCL and Airflow Catalyst Systems. Fortistar developed a strong interest in DCL's approach due to DCL's stated ability to provide a firm guarantee that encompassed the entire scope of equipment supply. This single vendor concept is important to Fortistar because procuring gas conditioning equipment and exhaust gas treatment from separate vendors inherently creates more operational and warranty risk should the equipment ultimately fail to provide the gas quality required for our PPA partners. Accordingly, from the beginning of our discussions with DCL we required operational data to confirm the proposed equipment's effectiveness. Unfortunately, for various reasons, DCL has not yet provided the data to Fortistar and the equipment guarantee has not materialized in an acceptable form.

Although we continue to work with DCL in pursuit of data proving the effectiveness of their proposed equipment and warranty, we are now actively working with other vendors to comply with the Rule. For gas conditioning we are in discussions with Parker and Willexa relative to equipment proposals. For the SCR system we are engaged in active discussions with Miratech as an alternative to AeriNOx (a DCL affiliated company). Our first priority, based on engineering, production and delivery constraints, is the procurement of the gas conditioning equipment. We are informed, the expected production timeline for this component is approximately 26 weeks from approved drawings with 4-6 weeks being required for submittal drawing preparation. Allowing 2 weeks to

[1] The second engine is scheduled for shut-down consistent with the implementation date of Rule 1110.2.

review/approve drawings, this amounts to approximately 34 weeks to deliver a gas conditioning system.

As you can see from Exhibit A, we have been substantially involved in the vetting of new compliance technologies and have invested resources – financial and otherwise – in exploring all options. Our proposed path forward for Lopez is:

- Continue negotiations with equipment vendors so that a recommendation can be made to Fortistar management for procurement of a gas conditioning system by **8/31/15.**
- Issue purchase order for gas conditioning system on or about **9/30/15** and subject to Fortistar's satisfaction of the reliability of the equipment.
- Electrical separation of Lopez engines complete and providing power to LADWP by **10/30/15.**
- Continue negotiations with equipment vendors and recommend procurement of an SCR system by **10/30/15.**
- Issue purchase order for SCR system by **1/15/16.**
- Delivery of gas conditioning system at Lopez expected by **6/1/16.**
- System operational for testing following installation by **10/1/16.**
- Lopez gas conditioning system and SCR system fully operational by **1/1/17. Note: Shake out period and reliable functioning by 1/1/18 .**

However, the decision to analyze and deploy new technology does not exist in a vacuum. Like other entities, Fortistar continues to make these decisions against the backdrop of the economic climate in which it operates. This is evident considering our experience at Prima Desheca.

3. Prima Descheca

Although the Lopez site is our test bed for our integration of compliance technologies, economic factors make the Prima Descheca ("Prima") site more challenging. Prima entered into a power purchase agreement (PPA) with SDG&E in 2008 which expires on October 1, 2022. The power pricing is in the high $50/MW-hour range. The low power price and short term remaining on the PPA do not provide for adequate revenue or operating life to recover the installation and operational costs of the necessary equipment for Rule 1110.2 compliance. The project has an annual net profit of approximately $200,000. In addition, the project has posted an approximate $940,000 letter of credit securing its obligation to deliver electricity to SDG&E for the term of the PPA. If required to comply with Rule 1110.2, the project would be forced to shut down effective by January 2017, resulting in an approximate loss of $2,500,000 in revenues, including the loss of the letter of credit.

3

Further, with annual Compliance Flexibility Payments estimated at $390,000, these obligations alone are far in excess of annual profits which makes it uneconomic to continue operations. Given these facts, *we believe it is equitable to request that the Prima project be grandfathered under existing rules and be permitted to operate until the expiration of the current term of the SDG&E PPA, or October 1, 2022*.

4. Conclusion

We appreciate your consideration of Fortistar's genuine and substantial efforts in adopting compliance technology and the circumstances, which we feel justify an extension of the compliance timelines at two of our facilities. We understand that the rule making process is a complex one and we thank you for your receipt and evaluation of these comments.

Very truly yours,

Jonathan Maurer

Jonathan Maurer
Acting CEO
Fortistar Methane Group, LLC

4

EXHIBIT A: TIMELINE OF EFFORTS TO COMPLY WITH RULE 1011.2

The following is a timeline of actions taken relative to procurement of equipment necessary for compliance with Rule 1110.2. Many communications with DCL and other vendors have taken place in addition to these events:

- **June 2014** – Acceptance of Fortistar proposal by LADWP for power under the LADWP FIT program. Until this date, Fortistar did not have a viable financial model for installation of equipment required by rule 1110.2. **The project was approved and funded subject to conditions required for financing (i.e. executed PPA). This included the installation of equipment required by rule 1110.2.**

- **September 2014** – Project Development scoping meeting conducted at DCL office in Toronto, Canada.

- **9/16/14** – DCL visits Lopez site and draws gas samples collected for use in development of the preliminary design of the gas conditioning and SCR systems.

- **9/30/14** – Fortistar received quote for gas conditioning and purification system from DCL.

- **10/2/14** – Gas analytical report received from 9/16/14 samples.

- **10/3/14** – Fortistar received quote for catalytic guard bed from DCL.

- **10/31/14** – Fortistar received revised proposal from AeriNOx for SCR system based on ongoing discussions with the vendor.

- **10/31/15** – Fortistar completed development and was in a position to execute PPA with LADWP; we deferred execution to request some contract cleanup items.

- **2/10/15** – Fortistar received a revised quote from DCL for gas conditioning and catalytic guard systems based on ongoing discussions with the vendor. Met with DCL prior to 1110.2 meeting and were told to expect operational data imminently. Fortistar expressed willingness to execute a Purchase Order with DCL once data was reviewed.

- **2/26/15** – Gas sampling for additional VOC data.

- **3/18/15** – Met with DCL in New Orleans and were told to expect operational data imminently.

- **3/31/15** – Fortistar received the cleanup items on the terms of the LADWP PPA and executed the contract.

- **4/9/15** – Receipt of fully executed PPA from LADWP for Lopez project. **It is important to note that this was a requirement for financing of the project.**

- **4/22/15** – Fortistar requested quote from Miratech for SCR system.

5

Responses to Letter #10

Response 10-1

This introductory comment explains that this comment letter was submitted in conjunction with the rule-making process for the proposed amendments to Rule 1110.2. Thus, responses to the specific comments are presented in Responses 10-2 and 10-3.

Response 10-2

The commenter has included its previous comment letter submitted on August 10, 2015, and has provided an updated installation schedule for its Lopez facility. The commenter also reiterates that a one-year shake out period is required to ensure reliable control system operation.

Staff appreciates the update and acknowledges Fortistar's commitment to the installation of biogas engine control technology at the Lopez facility. Please refer to Response 1-3.

Response 10-3

The comment requests an extension of the compliance date without payment of a fee. Please refer to Response 1-3.